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NEW INVESTIGATIONS IN THE ENVIRONMENT, HISTORY, AND ARCHAEOLOGY OF THE IRAQI HILLY FLANKS: SHAHRIZOR SURVEY PROJECT 2009–2011

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Recent palaeoenvironmental, historical, and archaeological investigations, primarily consisting of site reconnaissance, in the Shahrizor region within the province of Sulaymaniyah in Iraqi Kurdistan are bringing to light new information on the region's social and socio-ecological development. This paper summarises two seasons of work by researchers from German, British, Dutch, and Iraqi-Kurdish institutions working in the survey region. Palaeoenvironmental data have determined that during the Pleistocene many terraces developed which came to be occupied by a number of the larger tell sites in the Holocene. In the sedimentary record, climatic and anthropogenic patterns are noticeable, and alluviation has affected the recovery of archaeological remains through site burial in places. Historical data show the Shahrizor shifting between periods of independence, either occupied by one regional state or several smaller entities, and periods that saw the plain's incorporation within large empires, often in a border position. New archaeological investigations have provided insight into the importance of the region as a transit centre between Western Iran and northern and southern Mesopotamia, with clear material culture links recovered. Variations between periods' settlement patterns and occupations are also beginning to emerge.

Introduction

In 2009, a joint team from the University of Heidelberg and the Directorate of Antiquities of Sulaymaniyah initiated an archaeological survey in the province of Sulaymaniyah, Iraq, in the region of the Shahrizor Plain. Since 2011, the Shahrizor Survey Project (SSP) has been joined by staff from University College London, focusing on historical and palaeoenvironmental research, and from Leiden University, investigating prehistoric periods.[2] The survey area lies in the east of the province near the border with Iran. The Shahrizor is a plain stretching from the north-west to the south-east along the western edge of the Zagros and south-east of Sulaymaniyah between Arbat and Halabja (Fig. 1). The research goal is to apply a multidisciplinary approach to bring forth new information on the region's palaeoenvironment, history, and archaeology, in order to better understand how these three components interrelated and influenced the region's social and socio-ecological development in the past.

Our paper starts with a short background description on the region's geography and previous palaeoenvironmental and archaeological work (Altaweel, Marsh, Mühl). A discussion on palaeoenvironmental research conducted in 2011 (Altaweel, Marsh) follows. A survey of the region's history from the Bronze Age kingdom of Simurrum to the end of the independent Baban principality in the Ottoman period, with references to the available text sources, is presented next (Radner), followed by a discussion on new archaeological work undertaken since 2009 (Mühl,

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Nieuwenhuyse, Saber, and Rasheed). Figure 1 provides a guide to the palaeoenvironmental and archaeological sites discussed. Table 1 lists the archaeological and historical periods discussed in the various sections.

Geographical and research background

Geography

The Shahrizor is a wide, open valley, divided from the regions of Chemchemal and Kirkuk in the south-west by a double mountain barrier consisting of, firstly, the Binzird Dagh and Beranan Dagh ranges and, secondly, the higher Qara Dagh range (Fig. 4). The Zagros Mountains lie to the north-east of the Shahrizor, with the Pir-a Magrun, the Azmir, and the Hewrman ranges forming the plain's immediate perimeter. To the northwest of the Shahrizor, separated by the mountainous but easily traversable Surdash region, flows the Lesser Zab (or Little Zab) which leads into Northern Mesopotamia. The Tanjero River is the major stream in the north-western Shahrizor and it flows in

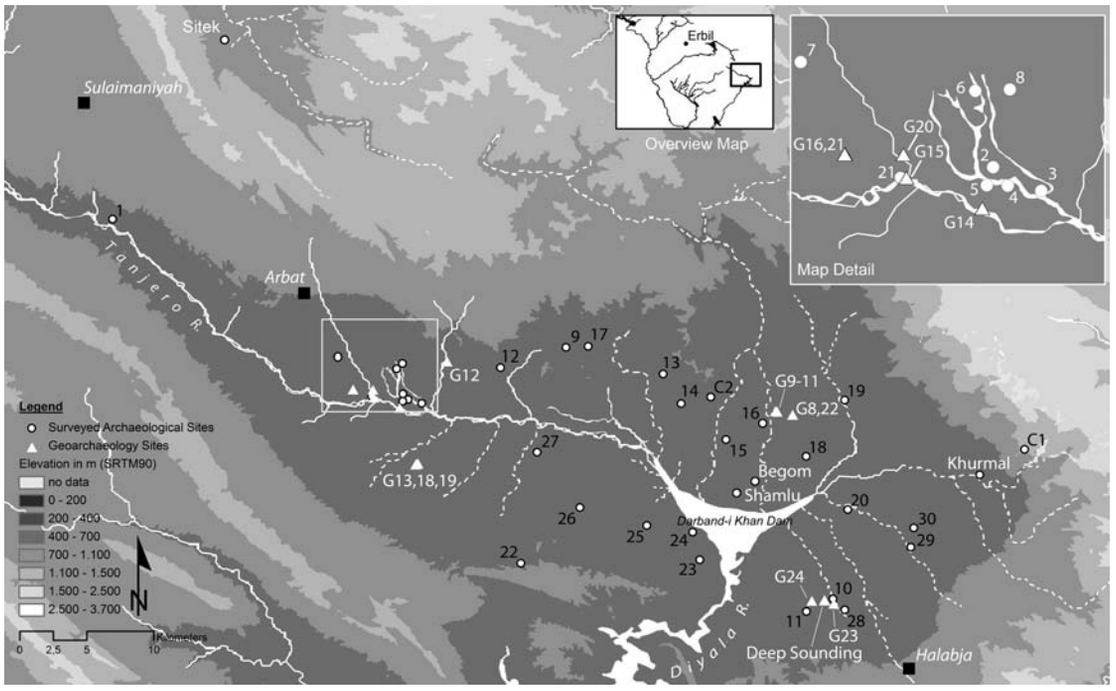


Fig. 1 Investigated archaeological and palaeoenvironmental sites in the Shahrizor Plain. 1. Tepe Kal (تپه کل),[3] 2. Yasin Tepe (یاسین تپه),[4] 3. Marif Tepe (ماریف تپه), 4. SSP 4, 5. SSP 5, 6. Bestansur (بستان سور),[5] 7. Girda Resh Barika (گردە رە ش باریکە),[6] 8. Kazaw (کازاو),[7] 9. Greza (گریزە), 10. Bakr Awa (بکر أوە),[8] 11. Gurga Chiya (گورگە چیا), 12. Bin Gird-i Muan (بن گردی موان),[9] 13. Gird-i Saraw (گردی سە راو), 14. Gird-i Qalrakh (گردی قالرخ),[10] 15. Gird-i Shatwan (گردی شاتوان),[11] 16. Tell Hajji Abdallah (تل حاجی عبداللە),[12] 17. Quruchiya (قوروچیا), 18. Gird-i Qara Tepe and Gird-i Sharif (گرد قرە تپە و گردی شە ریف),[13] 19. Gird-i Qulkhurd (گردی قلخرد),[14] 20. Lamarkazi (لامە رکە زی), 21. Kara Gol (کرە گـۆل), 22. Qalija (قلیجە), 23. Sutik Tepe (سوتک تپه), 24. Gird-i Shakar (گردی شکر),[15] 25. Qalbaza Tepe (قە لبە زە تپە), 26. Alan Tepe (عالان تپه),[16] 27. Maluan (ملون), 28. SSP 28, 29 Tepe Kurra (تپە کرە),[17] 30. Tepe Sheshak Hağğ Hussain (تپه شیشک حسین),[18] C1. Khan Ahmed Khan Cave (خان احمد خان), C2. Sa'id Sadeq Cave (سید صادق).

[3] The Atlas of Archaeological Sites in Iraq (AASI).86.6; Archaeological Sites in Iraq (ASI).334.37.
[4] AASI.86.34; ASI.334.79.
[5] AASI.86.23; ASI.334.97.
[6] AASI.86.26; ASI.334.76.
[7] AASI.86.22; ASI.334.100.
[8] AASI.77.14; ASI.342.80.
[9] AASI.79.18; ASI.344.139.
[10] AASI.79.46; ASI.344.15.
[11] AASI.79.45 (position not identical with visited site); ASI.343.137.
[12] AASI.79.43; ASI.343.18.
[13] AASI.79.40; ASI.342.84.
[14] AASI.79.11; ASI.344.141.
[15] ASI.345.177; Janabi 1961.
[16] ASI.345.172.
[17] AASI.77.10; ASI.342.84.
[18] AASI.77.3; ASI.342.92.

TABLE 1: Preliminary Shahrizor chronology based on absolute dates, archaeological periods, pottery, and historical data.

Absolute Dates	*Archaeological Period*	*Pottery Sequence*	*Historical Period (// = contemporary Southern Mesopotamia)*
7000–5300 B.C.	Late Neolithic	Jarmo Hassuna Halaf	
5300–4500 B.C.	Chalcolithic	Ubaid	
4500–3000 B.C.	Late Chalcolithic	Late Chalcolithic/Uruk	
3000–2000 B.C.	Early Bronze Age	Scarlet Ware and local ED pottery tradition (ED I) Early Dynastic III/Akkadian/ Ur III	Simurrum // pre-Sargonic/ Akkadian/Gutean/Ur III
2000–1500 B.C.	Middle Bronze Age	Early Old Babylonian Shamlu (early, late)	Simurrum // Early Old Babylonian (Isin, Larsa)
1500–1000 B.C.	Late Bronze Age	Kassite and local wares Middle Assyrian and local wares	Kassite Middle Assyrian
1000–500 B.C.	Iron Age	Neo-Assyrian/Neo-Babylonian and local wares	Neo-Assyrian (kingdom Ammali; after 842: Assyrian province Mazamua) Neo-Babylonian (associated state Mazamua)
500 B.C.–636 A.D.	Classical	Achaemenid/Hellenistic Parthian Sassanian	Achaemenid/Hellenistic Parthian Sassanian
636–16th century	Islamic	Early Islamic Middle Islamic Late Islamic	Abbasid/Ilkhanid
16th–early 20th centuries	Ottoman	Kurdish Ware	Ardalan/Ottoman/Baban

a south-eastern direction. After merging with a number of perennial streams from the surrounding mountain ranges, the Tanjero meets the main branch of the Sirwan (as the Upper Diyala is called) and its eastern tributaries in the south-eastern part of the Shahrizor, which is part of the headwater region of the Diyala River that connects the region to Central and Southern Mesopotamia. The area is now submerged under the Darband-i Khan Dam Lake. The terraces formed by the Tanjero River and its tributaries shape and structure the plain.

In more recent periods, the Shahrizor has been known for its agricultural productivity, with slightly to moderately alkaline soils (Sehgal 1976). In the non-cultivated alluvial soils of the Shahrizor, one can still observe advanced growth of various weeds and cereal grasses, including wild barley. Nevertheless, only 30 % of the land in relatively recent periods was devoted to grain cultivation, which is possible in a two-tier rotation system; about 50 % of the land was allocated to animal husbandry more than fifty years ago (Davies 1957). Transhumance was a major economic mode in the region during that time, with sheep and goat herds seasonally led down by semi-pastoral groups from the mountain region between Penjwin and Halabja. The mountain chains bordering the plain mainly consist of Cretaceous period limestones and the steep sides of the Zagros are softened by alluvial fans and colluvial deposits consisting of poorly sorted sediments derived from the uplands (Ali 2007). These highlands are sparsely vegetated, covered mostly by shrubs of oaks, hornbeams, sycamore trees, and robinia (Wirth 1962: 179). While most slopes are deforested, recent Kurdish government actions have begun to reforest the surrounding mountains. The plain's climate is Mediterranean, characterized by cold winters, while the summers are hot but cooler than southern Mesopotamia. This region is one of the wettest in Mesopotamia; the rainy season starts in October and lasts to May, with roughly 700–900 mm of precipitation falling in the area, although snowfall is generally limited in the plain (Sehgal 1976; Ali 2007).

The Tasluja and Baziyan passes (Fig. 4) north-west of Sulaymaniyah provide access into the plain from the region of Kirkuk. A succession of passes, most importantly the Paikuli Pass (Fig. 4), lead into the Diyala valley. The pass over the Hewrman range near Khurmal provides access into Iran in

the east of the plain, while the northern route over Kawlos and Penjwin leads to Lake Zeribar (also Zrebar or Zarivar). These entry and exit points make the Shahrizor an import transit region between the Iranian plateau and the Mesopotamian plains, in the present and historically.

Regional palaeoenvironmental and archaeological research

As for the region's palaeoenvironment, very little is known about the broader region, and even less about the Shahrizor Plain itself. When Braidwood was excavating at Jarmo and nearby Karim Shahir in the Chemchemal region in the 1950s, geologists and botanists, such as H.E. Wright Jr. and H. Helbaek, were brought in to study the surrounding area and environmental evidence from the sites (Braidwood and Howe 1960; Braidwood *et al.* 1983). Wright extended his study area to include the Zagros in the far north of Iraq (Erbil province) in order to further the understanding of Pleistocene glaciation in the region (Wright 1961a; 1961b; 1980; 1983). Separate projects, involving the coring of Lake Van in Turkey (van Zeist and Woldring 1978; Landmann *et al.* 1996; Wicke *et al.* 2003) and Lakes Zeribar (van Zeist and Wright 1963; Stevens *et al.* 2001; Snyder *et al.* 2001) and Mirabad (van Zeist 1966) in Iran, have also taken place. These lake cores have provided valuable information in the understanding of Pleistocene and Holocene climate changes and human impact in the Near Eastern region. As useful as these data on climate and vegetation changes, reforestation commencement, and glaciation are, however, they provide only a general picture of environmental change in the Shahrizor during the Pleistocene and Holocene.

The available regional environmental proxies are generally corroborated by other studies in the Middle East, and the general trends in the Zagros indicate that the Pleistocene glaciation periods were marked by aridity, with a lowering of the snowlines (opinions differ on snowline levels: Wright 1961b; 1983; *contra* Bobek 1940; Butzer 1971: 296). The regional flora consisted mainly of steppic to semi-desert vegetation with Chenopods and *Artemesia* predominating (Stevens *et al.* 2001), with perhaps the presence of some trees along the mountain river channels (Wright 1983). The advent of the Holocene saw increased precipitation, a shift in the position of the sub-tropical belt, and a change to the modern Mediterranean climate regime with dry summers and wet winters; vegetation consisted of oak and pistachio woodlands and grasses, with open woodlands developing into more expanded forested areas (van Zeist 1966). Reforestation of the western Zagros and Taurus seems to have been rather late (van Zeist and Woldring 1978; Wright 1983). However, how such climate change and subsequent environmental change and human impact are reflected in the Shahrizor proxy records, such as sediments, pollen, and diatoms, is only now beginning to be investigated.

Before the Sulaymaniyah Board of Antiquities and Heritage initiated new work after 2003, relatively few archaeological investigations were undertaken in the Shahrizor. Prominent works included a survey of archaeological sites by the Iraqi Directorate of Antiquities and Heritage in 1943 and 1946–48 that catalogued known archaeological sites throughout Iraq, including the Shahrizor, and salvage survey and rescue excavations in the south-east part of the Shahrizor due to the construction of the Darband-i Khan Dam. Many of the sites investigated in these projects are referenced within the Archaeological Sites of Iraq (ASI) and the Atlas of Archaeological Sites in Iraq (AASI) publications (cf. Fig. 1). In the adjoining regions, only a limited amount of work has been conducted, most importantly the already mentioned archaeological and palaeoecological project headed by Robert and Linda Braidwood (Braidwood and Howe 1960; Braidwood *et al.* 1983), the Danish-Iraqi excavations at Tell Shemshara in the Rania Plain (Mortensen 1970), and Ralph Solecki's work in the Shanidar cave near Rowanduz (Solecki 1954; Solecki *et al.* 2004).

Palaeoenvironmental investigations

Although much work has been done on the geology and hydrology of this mainly karstic region (Karim and Ali 2005; Ali 2007; Karim *et al.* 2008), and on the modern soils (Sehgal 1976; Hussain *et al.* 1984; Berding 2003), very little has been done to further the understanding of Quaternary sedimentation patterns and evolution of the plain. Because of its high altitude, intermontane position, and high precipitation, the plain has localised patterns that likely differ from the general trends indicated by the lake cores. In addition, the orographic (rain shadow) position of the Iranian lakes may have had some impact on the pollen and diatom records and so could reflect a vegetation/

environmental pattern that is somewhat different to that of the wetter Shahrizor area, particularly in the Mid and Late Holocene.

To better understand the environmental changes and land use patterns within the Shahrizor Plain, and how these might relate to the evidence found in surrounding regions and the Near East in general, we conducted in 2011 a palaeoenvironmental pilot study looking at the intermontane plain area between Sulaymaniyah and Halabja. Sediment sections (Fig. 1: G 14–16, G 18–19, and G 22–24) in the alluvial plain and colluvial fringe of the Shahrizor were recorded and sampled. We made detailed visits to other exposures (G 1–13, G 17, G 20–21), briefly viewed a deep well cut and exposure (Fig. 2: Sediment Exposure), and excavated a 48 × 7 m deep sounding (located in the alluvial plain at the base of the foothills), with a maximum depth of 7 m, to obtain more detailed environmental data (Fig. 2). The deep sounding was photographed, drawn, and sampled for phytoliths and sediments; additional sediments and charcoal were taken for AMS dating. Other types of samples collected included a few seeds, several pottery sherds, and fired clay. The following summary is based on the preliminary analysis of sediment samples collected from the deep sounding, several of the off-site sampled areas, other observations made in the field, proxy records from other regions, and desk-based research.

The Pleistocene

Although this region will not have been affected by the major northern ice sheet advances and retreats, there was some glaciation extending from the Zagros: this would have been similar to the glaciation affecting the European Alpine region, although with no joining up with the major ice sheets. The main impact of the glaciation would have been increasing aridity and advancing snowlines. The glacial/interglacial cycles of the Pleistocene likely had an effect on Palaeolithic inhabitation in the region. There is evidence for early Palaeolithic occupation in the region, specifically at Shanidar cave (Solecki 1954).

Regional climate evidence comes from lake core analyses (pollen, sediment, chemical and diatom) from Lake Zeribar (just on the other side of the border with Iran), Lake Mirabad (near Zeribar but at a lower altitude), and Lake Van in south-east Turkey, as mentioned above. During the glacial periods, there was increasing aridity; these periods were interrupted by interglacials, characterised by snowline retreat and increased temperatures and precipitation, leading to increased fluvial activity and terrace formation. The Pleistocene terraces, which appear as gently rolling hills, where not eroded by later fluvial (river) activity, are made up of mainly limestone gravels originating from the surrounding mountains. In most of the quarry and wadi cuts that we observed (Fig. 1: G 13, G 16, G 18–19, G 21), there was very little other sediment present in the gravel beds; however, in some cases,

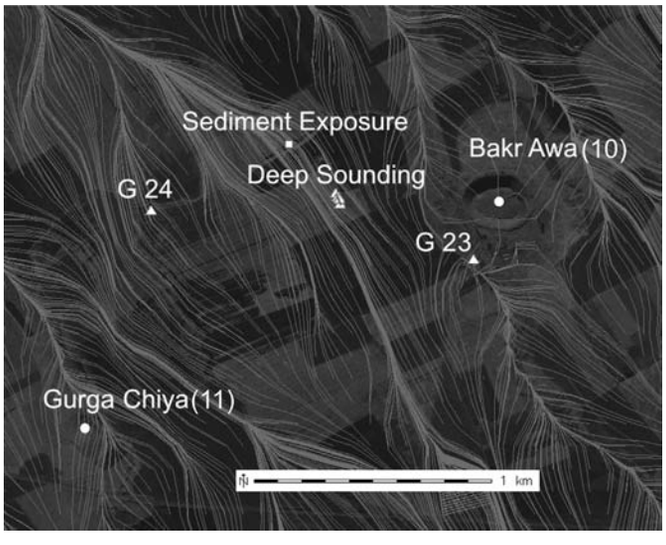


Fig. 2 QuickBird November 2010 satellite image showing the area around Bakr Awa (SSP 10) and Gurga Chiya (SSP 11) overlaid with hydrological flow lines. Locations of a sediment exposure and geoarchaeological study sites are shown.

there were some finer grained sedimentary strata (e.g., G 18–19). The colour of the limestone gravel beds alternated between pinkish and bluish colours, indicating a change in source material and origin.

As in other parts of the Near East (Issar 2010), there was terra rossa soil formation in the uplands during the Pleistocene. Terra rossa formation is common in karstic regions across the world and is a predominant product of Pleistocene soil formation. In the Pleistocene terraces observed, there did not appear to be a large quantity of transported terra rossa, in contrast to Holocene deposits, although some was observed embedded within gravel layers. However, there may be larger deposits in the surrounding alluvial fans and colluvial deposits at the foot of the mountains. These will be studied in the future. The Pleistocene glacial vegetation cover in the uplands and plain in the Shahrizor has not yet been properly assessed, but the vegetation would probably have been steppic or semi-desert as described above.

The Holocene

With the advent of the Holocene, and the shift of the subtropical belt (Wright 1983), temperatures and precipitation increased, thus leading to an increase in fluvial activity across the region as well as a change in vegetation. A new climate regime (i.e. Mediterranean) was established across the Near East, including the Shahrizor, characterised by dry summers and wet winters. With the new climatic regime came a suite of vegetation of oak, pistachio, and grasses, including cereals.

The lower areas of the Shahrizor Plain are uneven and characterised by higher elevation areas, the Pleistocene gravel terraces, as well as the lower Holocene floodplain. This floodplain is incised by wadis, which flow towards the Tanjero and Sirwan river system (nowadays in the shape of the Darband-i Khan dammed lake, located to the northwest of Halabja; Fig. 1), as well as other wadis which flow perpendicular to these. Figure 2 shows water flow direction in the area near Bakr Awa (SSP 10) based on a digital elevation model (DEM) of the region; areas that have a high concentration of flow lines merging together are modern wadi channels, with flow lines showing the direction of water flow and sedimentation build up. Extensive channel incision seems to have been going on throughout the Holocene, as indicated by the channel cuts we came across in the deep sounding, with one found running toward the dam lake and two running perpendicular. At this early stage, it is impossible to determine which channels were active when. The majority of the floodplain is now 'stable', allowing for soil formation with its associated horizonisation. The Pleistocene terraces and the Holocene floodplain are both farmed, and a large number of tell sites, including Bakr Awa, sit on the Pleistocene terraces.

In the deep sounding (Tab. 2), the topsoil and its associated horizons took up the top 1.5 m; A, B and C horizons were seen in these layers. In one part of the section, a channel cut lay directly beneath this soil layer. No sedimentary features were seen (cross stratified sands, boundaries, etc.); it seems that soil formation processes may have completely obliterated any traces of sedimentary features. Below this channel cut, and not associated with it, an Achaemenid-Hellenistic period rim sherd was found (Fig. 3; cf. Wilkinson and Tucker 1995: 215, fig. 74, no. 26–27). This would suggest that the channel cut and soil formation occurred sometime during or after the mid-first millennium B.C. Although one has to take any single find such as this sherd with some caution, the find does suggest that this part of the floodplain has been fairly stable for the last two thousand years or so. Below this cut, at about 1.5 m to 6 m, reddish-brown pedo-sediment with calcrete nodules was seen (Fig. 3). At about 5 m, very poorly preserved pottery was found, which helps to confirm that this lower section is dateable to the Holocene period. This indicates that in at least some places early period settlements, such as those from the Neolithic, might be buried under several meters of sediment. We should, therefore, expect that the recovery of prehistoric materials and sites in some parts of the plain will be limited or obscured by alluviation. Alluvial infilling may also partially explain why few low mounded sites and concentrated field scatters have been observed so far. Coring in the plain will enable us to understand sedimentation patterns across the area and how this may impact the preservation (or erosion) of artefacts and sites. At 6 m, a gravel bed, consisting of pinkish limestone, was encountered; a test pit was excavated to 7 m but we did not reach the bottom of this layer. It is most likely that this gravel bed formed part of the Pleistocene terrace, with pinkish material representing terra rossa mixed within the gravel layer.

There was very little variation in the reddish pedo-sediment located between the lower gravel bed and the upper topsoil, and no sedimentary features were seen. Throughout the deep sounding's

sections, and as seen in other areas visited (e.g., G 22 and G 24), the texture was similar—silty clay. There was a little variation in colour, and some variation in the number of calcrete nodules (see Tab. 2). At the bottom of the deep sounding section, immediately overlying the gravel bed was a layer of reddish pedo-sediment with iron flecks and few calcrete nodules (Unit 3). This was overlain by a slightly browner reddish sediment which contained more calcrete nodules but fewer iron flecks (Unit 2). In one temporally adjacent area, there was a lens of pedo-sediment (Unit 3a), which was slightly mottled, representing perhaps a more waterlogged, marshy area. The section at G 24 (Fig. 2) also contained a similar mottled lens. There were channel cuts in the deep sounding, but there were no sedimentary features to be seen above the channel cuts and instead they contained the same type of material encountered throughout (i.e. reddish-brown pedo-sediment). The reddish colour, due to the oxidisation of iron content, found in this material indicates its source: the terra rossa derived from the uplands. Terra rossa is usually referred to as a soil, and thus soil formation processes are attached to it. As it was eroded and deposited elsewhere, namely the floodplain, it became a sediment, or more accurately a pedo-sediment (i.e., transported soil).

The issue now is whether or not further soil formation processes took place post-deposition in the floodplain. Although floodplains are considered dynamic landscapes, soil formation can and does take place. Often young soils are formed, those with very weak A horizons, with soil formation being interrupted by the regular seasonal flooding of perennial streams. Presently, there are many wadis in this area, rather than perennial streams. At this point it is difficult to judge which rivers may have been perennial or more ephemeral in the past. Wadis are ephemeral, and so it is with the spring melt and/or seasonal rains that they begin to flow. The discharge is usually higher, and thus the erosive effect can be more destructive. In the past, however, there was more rainfall as well as more vegetation on the hillsides, which would have regulated the streamflow and would have resulted in more even, perennial flow and seasonal alluviation.

Throughout much of the Holocene, vegetation in the Shahrizor Plain itself is likely to have consisted of grasslands, woodland, and riparian galleried forests. The natural balance of this vegetation would have been altered by human impact, including farming, pastoralism, and deforestation. Alluvial soils are enriched by seasonal fluvial flooding, allowing the cultivation of a variety of crops. Dry farming can also be practiced on Pleistocene terraces. Considering the density of sites across the plain, it seems likely that farming was practiced successfully and thus some soil formation must have taken place, but the question is where those field systems are located. It is hoped that the phytolith samples taken from the 2011 deep sounding may indicate past field systems; further pollen and phytolith samples will be taken from other locations in the plain to help clarify the picture. Pastoral activities, specifically herd grazing, would have affected grassland and shrubbery composition, both in the plain and the foothills. This, too, needs further investigation in order to understand land use and vegetation shifts.

Provided that the Achaemenid–Hellenistic sherd indicates some relative dating of the level in which it was found, and taking into consideration that there was weak soil formation earlier and more soil formation (i.e. maturation of the horizons) above this sherd, there seems to have been a shift in the climate and/or anthropogenic impact became more evident later in the Holocene. In the Early to Mid Holocene, it is likely that there was more rainfall, with more perennial rivers and associated wetland areas. In other words, there may have been more regular alluviation, which would have slowed soil formation processes. After the Achaemenid–Hellenistic period, there may have been increasing aridity, although there was still relatively ample rainfall in the region, which would have altered hydrological behaviour and sedimentation. The Near Eastern proxy records indicate decreasing volatility in the Late Holocene as compared with the Early to Mid Holocene (Rosen 2007: 101) and there are periods of increasing aridity in the first millennia B.C. and A.D. (Roberts *et al.* 2004: 356). The lake records from Mirabad and Van also indicate a wetter phase around AD 1000, although the Lake Zeribad proxies indicate a more general aridity trend (Roberts *et al*. 2011: 150, fig. 2). Given this background, it is likely that human impact, via deforestation, grazing, and farming activities, played an important, if not leading role in the evolution of the Shahrizor Plain. This would have led to more significant erosion in the highlands, sedimentary infilling in the lowlands during the later Holocene, and a change in vegetation that would have altered the local climatic patterns (Roberts *et al.* 2004: 356). It is very difficult to separate the effects of natural climate change from

those driven by human impact, and so further sampling and analysis will need to be carried out in order to clarify environmental change.

Future work will include coring and trenching other areas in the Shahrizor Plain. The analyses on these samples will include sediment, diatoms, and phytoliths.

Historical survey: from Simurrum to the Ottoman Empire

Textual sources enable us to trace the regional history of the Shahrizor from the second half of the third millennium B.C. onwards. There are, of course, significant gaps in the available documentation, especially prior to the Sassanian period. The resumed archaeological exploration of the region is bound to fill some of these gaps eventually, specifically for the period prior to 600 B.C. as existing sources show that the Shahrizor was part of the cultural zone using cuneiform as a writing system, making it very likely that excavations will yield clay tablets. In addition to the tablet finds from Tell Bakr Awa (see below), a fragment of a Neo-Assyrian land sale document was found in

TABLE 2: Description of the sedimentary units in the deep sounding.

Unit	*Depth (m)*	*Colour*	*Structures*	*Boundary*	*Texture*	*Inclusions*
1	c. 1.5-2.25	10R 4/2 (dark greyish brown)	none	not visible	silty clay	
2	c. 2.5-5.5	7.5YR 4/4 (brown)	none	not visible	silty clay	few calcium nodules
2a	3.25-4.75	7.5YR 4/4 (brown)	none	not visible	silty clay	calcium nodules
3	c.4.75-6.25	5YR 4/4 (reddish brown)	none	abrupt erosional	silty clay	few calcium nodules and some iron nodules
3a	c.4.75-6	5YR 4/4 (reddish brown)	none	not visible	silty clay	mottling; few calcium nodules and some iron nodules
4	c.6.25-	7.5YR 7/3 (pink)	massive	not visible	gravels with some silty clays	

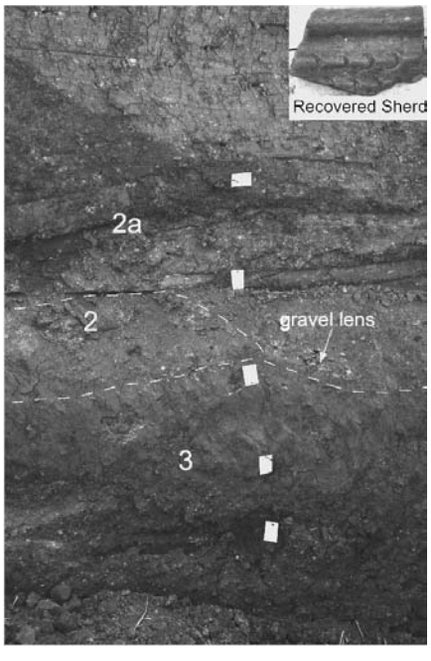


Fig. 3 Reddish-brown pedo-sediment between 1.5 m and 6 m below the surface of the deep sounding and an Achaemenid–Hellenistic period sherd found nearby. The tags indicate phytolith samples taken in the section and numbers indicate sedimentary units (see Tab. 2). Dotted lines show approximate boundaries between stratigraphic units. Note: not all sedimentary units are represented in this photograph.

2010 during rescue excavations at the town of Sitek, 20km northeast of Sulaymaniyah, conducted by Hussain al-Hamri and Saber Ahmed Saber for the Sulaymaniyah Board of Antiquities. In the following, the regional history of the Shahrizor is surveyed, with special reference to the political allegiances and organisation of the region. We shall encounter the Shahrizor in a variety of guises, most prominently perhaps as the heartland of independent principalities, as a contested region between empires, a hub in long-distance traffic, and a transition zone of cultures. Figure 4 highlights key places referenced in the following paragraphs.

The kingdom of Simurrum, and after

The kingdom of Simurrum (also Šimurrum), attested so far in textual sources for a period from the 24th to the 18th century B.C.,[19] had its core region in the Shahrizor. Mesopotamian sources refer to its inhabitants as "highlanders" (Sallaberger 1999: 306), and there is general agreement that Simurrum is located to the east of the Tigris between the Lower Zab and the Diyala (e.g., Westenholz

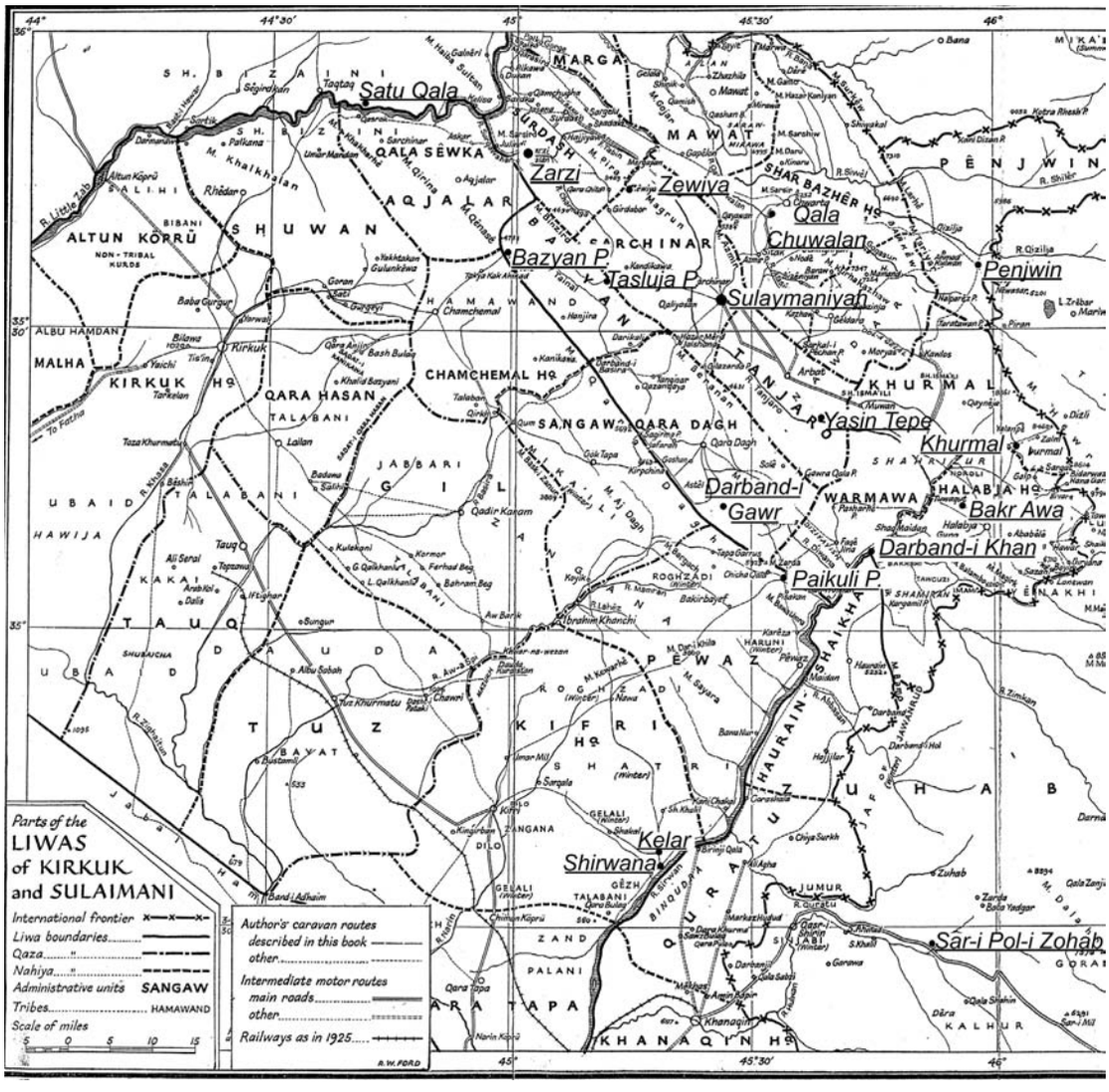


Fig. 4 Key sites (underlined) within and near the Shahrizor (after Edmonds 1957a).

[19] For the period prior to the mid-second millennium B.C. the conventional absolute dates of the so-called Middle Chronology are used for the reader's orientation. Without conviction, however: it is extremely likely that all these dates are too low by a century or so.

1997: 142), with its capital city of the same name situated on the upper stretches of the Diyala (Sirwan). On the basis of a consideration of the relationship between Simurrum and other sites, Douglas Frayne (1997a: 104; 1997b: 264–66; 1999: 151) proposed identification with the (unexplored) settlement mound at Kelar (Fig. 4) on the right bank of the Diyala in the extreme southeast of the province of Sulaymaniyah, now occupied by the 18th century A.D. castle of Qal'at Širwana (Fig. 4: Shirwana). But more recently, he suggested another location, now in the Shahrizor (Frayne 2011: 511: "the wide river basin west to the modern Av-i Tangero"[20]).[21] For geographical, geopolitical, and economic reasons the area just north of Darband-i Khan (Fig. 4) in the south-east part of the fertile and easily defendable Shahrizor would indeed seem the most likely general location of the city. As we shall see below, the position of Mount Nišba and of the rock reliefs of the later kings of Simurrum offer additional arguments in support of this hypothesis.

With a recorded history of close to half a millennium, Simurrum was one of the most stable political entities in the Middle East at that time. Intensified research in the Shahrizor, most prominently the excavations in Bakr Awa (SSP 11; Fig. 4) where strata coinciding with the existence of Simurrum are currently being excavated (Miglus *et al.* 2011), are bound to greatly enhance the rough sketch of its history, which can be drafted on the basis of sources from the kingdoms of southern Iraq, from Akkad to Isin and Ešnunna, as well as from more limited local sources.

Simurrum is first attested as an enemy of Sargon of Akkade (r. 2334–2279 B.C.) and his grandson Naram-Sin (r. 2254–2218 B.C.), as commemorated in three year names celebrating the victories of the Akkade rulers (Frayne 1993: 8, 87); one of these gives us some insight into how they perceived the political setup of Simurrum: "Year Naram-Sin was victorious against Simurrum in Kirašeniwe and captured Baba, ruler ($ENSI_2$) of Simurrum, and Dubul, ruler ($ENSI_2$) of Arame". The title $ENSI_2$ is used for rulers whose power base is a city that serves as the centre of a regional state known under the same name. While the site of the battle, Kirašeniwe, undoubtedly is Hurrian in origin, the name of the ruler of Simurrum, Baba, is of unclear etymology.

Simurrum outlived the existence of the kingdom of Akkade and is next attested as an enemy of Erridu-pizir, king of Gutium (whose dates of reign remain unclear). According to the inscription on his victory statue, "KA-Nišba, king of Simurrum, instigated the people of Simurrum and Lullubum to revolt", and the subsequent invasion of Simurrum is described (Frayne 1993: E2.2.1.2). Here, Simurrum is for the first time seen under the rule of a king (Akkadian *šarrum*). His name[22] invokes that of Mount Nišba (= Fig. 4: Hewrman range, see below), the sacred mountain worshipped as one of the highest gods of Simurrum (Cavigneaux and Krebernik 2001: 584–85). KA-Nišba commands not only his own people but also those of Lullubum, and this is the first time that the close association of Simurrum and Lullubum finds expression. Lullubum is best identified with the high plateau between the Qara Dagh and the Binzird and Beranan ranges, stretching along the southwestern perimeter of the Shahrizor from the Lower Zab to the Diyala. Lullubum's relative proximity to the Kirkuk region is obvious from two administrative texts from Gasur (Yorgan Tepe; later known as Nuzi) showing that cattle, sheep, and goats from Lullubum were brought to Gasur, while grain was sold to Lullubum (Klengel 1966: 251–52).

Subsequently, the kingdom of Simurrum was in contact with the rulers of the Third Dynasty of Ur. The Mesopotamian sources allow us to follow the relationship between the southern Mesopotamian state of Ur and Simurrum over half a century and trace its dramatic changes. A decade-long military conflict briefly led to the annexation of Simurrum, then under the rule of the Hurrian-named Tappan-Darah, (Owen 2000: 820–24). The year names of Šulgi of Ur (r. 2094–2047 B.C.) are the best source for this, with four of them celebrating a defeat of Simurrum: "Year Simurrum was destroyed (for the second / third / ninth time)"; considerable importance is assigned to these victories by also naming the following year(s) after the previous year's event. The grand finale is "Year in which Šulgi … defeated

[20] His localisation specifically at "Shamiran" (which is a district, not a specific site; cf. Fig. 4 and Edmonds 1957: *passim*; Safar 1974: 193) is based only on the similarity of that name with Simurrum which for methodological reasons is hard to accept.

[21] Note that the two conflicting proposals have given rise to confusion in the subsequent literature on Simurrum: while Eidem and Læssøe (2001: 24) and Shaffer *et al.* (2003: 28) refer only to Frayne's first proposal (Frayne 1997a, 1997b) when discussing the localisation of Simurrum, the map in Shaffer *et al.* (2003: 27) positions the city of Simurrum in the eastern end of the Shahrizor, near the Darband-i Khan dam lake, while Eidem and Læssøe (2001: 24) claim that "Frayne has concluded that it should be sought in the region of Darbandikhan".

[22] How the first element of the name is to be realised is unclear.

Urbilum (= Arbela; modern Erbil), Simurrum, Lullubum and Karakina[23] in one day" (Sallaberger 1999: 142–43), indicating an alliance of these four principalities against Ur which culminated in a joint battle. This, or possibly already an earlier one of Šulgi's victories, led to the temporary end of Simurrum's independence and the temporary instalment of a governor dispatched from Ur, Şilluš-Dagan, who is well attested in the archival sources (Owen 2000: 820, 825–37). The chronology is not entirely clear at present but Ur's control was decidedly short-lived and Simurrum very quickly regained its independence. Simurrum subsequently appears in Ur III administrative records as an allied state, with a diplomatic presence at the royal court of Ur (Sharlach 2005: 18 fn. 4, 21 fn. 31). The Simurrean diplomat Kirib-ulme, whose name is Hurrian, is attested in active service for four years (years 8 and 9 of Amar-Suena, r. 2046–2038 B.C., and years 1 and 2 of Šu-Sin of Ur, r. 2037–2029 B.C.; Sharlach 2005: 24). A decade later, however, Ur was again at war with Simurrum, with Ibbi-Sin of Ur (r. 2028–2004 B.C.) commemorating a victory against Simurrum in his year names (Sallaberger 1999: 173). Soon after, the kingdom of Ur collapsed, while Simurrum survived, now attested as an ally of Išbi-Erra of Isin (r. 2017–1985 B.C.; Frayne 1990: 707).

For this time, we have monuments, including some with cuneiform inscriptions in the Akkadian language, that were commissioned by the rulers of Simurrum themselves. So far, we know of the kings Iddi(n)-Sin, whose name is Akkadian, and his son Anzabazuna, whose name is of unclear linguistic affiliation; both are also attested in the sources from Ešnunna during the reign of Išbi-Erra of Isin (Whiting 1987: 38; Frayne 1990: 485, 707). Some of their officials are known from inscribed cylinder seals: the names Teheš-atal and Zili-ewri (Frayne 1990: 4.18.2.2001–2002) are Hurrian, while Ili-dannu (Shaffer *et al.* 2003: 34) bears an Akkadian name. The kingdom of Simurrum has been described as a Hurrian state (Hallo 1978), and while this idea may have a certain appeal, it is important to emphasise that only some of the rather few Simurreans known by name bear Hurrian origins, while others have Akkadian or unclassifiable names.

The monuments of the kings of Simurrum are rock reliefs and stelae that mark the extent of their military campaigns. The location of these monuments in the region of Bitwata (Fouadi 1978; Frayne 1990: 4.19.1–3; Farber 1998; Shaffer *et al.* 2003) in a valley off the Rania Plain and in the area of Sar-i Pol-i Zohab (Frayne 1990: 4.18.1; Fig. 4), respectively, indicate the northern and southern reaches of the control of Simurrum at that time. On the other hand, the find spot of an inscribed stele found at the entrance to the valley of Zewiya (or Zayway; Fig. 4) in the Pir-a Magrun range (Ahmad 1997: 115) and the rock relief of Darband-i Gawr (Fig. 4) in the Qara Dagh range (Strommenger 1963) are both situated in the mountainous regions stretching alongside the Shahrizor Plain, within easy reach of modern Sulaymaniyah, and make it abundantly clear that the Shahrizor was a part, and most probably the centre, of the kingdom of Simurrum.

When Daduša of Ešnunna and Samsi-Addu of Ekallatum made the lands west of the Zagros fringes the arena of their war in 1781 B.C. (Ziegler 2011), the once powerful kingdom of Simurrum seemingly did not play any active role in these conflicts. Simurrum's decline is evidenced by the fact that its vassals defected to Samsi-Addu at that time (Eidem and Læssøe 2001: nos. 1 and 2). Some fifteen years later, we encounter an unnamed king of Simurrum as a refugee and pawn in the power-brokering of the rising adjacent powers Turukkum and Gutium (Lackenbacher 1988: no. 491; Eidem and Læssøe 2001: 24, 55). The latest known attestation for the city of Simurrum gives it as the place of origin of a slave woman being sold in Babylonia in 1723 B.C. (27th regnal year of Samsu-iluna, r. 1749–1712 B.C.; van Koppen 2004: 12, 15, fig. 1, 24 no. 2). Archaeologically, the post-Simurrum period is likely to coincide with the presence of the so-called Shamlu Ware at sites across the Shahrizor plain (see below on the archaeology of the second millennium B.C.).

Between Karanduniaš and Assyria

At some point later in the second millennium B.C., the Shahrizor became part of Karanduniaš, the Kassite kingdom of Babylonia. Clay tablet finds from the Iraqi excavations at Tell Bakr Awa include a Middle Babylonian manuscript of the Babylonian Almanac (Iraq Museum, IM 63388; Matouš 1961) and give a clear indication of cultural influence from southern Mesopotamia in the

[23] Formerly read *Karhar; correct reading established by Wilcke 2006.

Shahrizor. The name Simurrum is no longer in use at that time but Lullubum is still attested, especially in the records from the Hurrian kingdom of Arraphe (with the capital of the same name located at modern Kirkuk and a wealth of text finds from Nuzi = Yorgan Tepe) from which the eastern neighbour beyond the Qara Dagh range emerges prominently as the place of origin for slaves (Maidman 1987: 163). The Arrapheans could not understand the language of the Lullubeans, which would seem to indicate that the Lullubeans were not Hurrian-speakers. But other than that, very little is known about the region or its political setup.

From the 13th century B.C. onwards, the kingdom of Assyria sought to increase its influence along the Lesser Zab. By the early 12th century, the border between the Assyrian and the Kassite sphere of control in that region had been established by treaty (Fuchs 2011: 253 on the Synchronistic History) at Mount Kullar, which can be identified with the mountains to the south of the Zab and west of its tributary, the Qala Chuwalan River (Fig. 4). This agreement placed the Shahrizor in the Kassite domain.

However, in the annals of Assurnasirpal II of Assyria (r. 883–858 B.C.) it is mentioned that "Sibir, king of Karanduniaš (= Babylonia)" had at one point captured the city Atlila in Mazamua (Grayson 1991: A.0.101.1 ii 84). Atlila can convincingly be equated with Bakr Awa (SSP 10; Speiser 1926/7: 13–14; Liverani 1992: 56), while the only known Babylonian ruler whose name conceivably could be recorded as Sibir is Simbar-Šipak (r. 1025–1008 B.C.). This indicates that by the late 11th century, the border agreement between Assyrians and Babylonians was no longer valid, that the Assyrians had been able to extend their control temporarily across the Shahrizor, and that the conflict zone with the Babylonians had been moved to the other end of the Shahrizor, near the pass of Hašmar which provides access to the plain from the Diyala. The pass of Hašmar is conventionally identified with Darband-i Khan (Speiser 1926/7: 26; followed by, e.g., Liverani 1992: 52 and Fuchs 2011: 232), but the narrow Diyala gorge there (visited in April 2010) is not at all suitable for traffic. The Hašmar pass should correspond to the pass of Paikuli (Fig. 4) across the Qara Dagh, which is clearly the most important pass in the region and the route used in the Sassanian period prior to the construction of bridges across the tributaries of the Sirwan (see below).

Not long after that, however, both the Assyrian and Kassite states withdrew from the region, and by the late 10th century B.C., when the Assyrians first attempted to reassert their control over the Shahrizor, we find a mosaic of small independent principalities there.

Mazamua from the late 10th to the 6th centuries B.C.

From the late 10th century B.C. onwards, the Shahrizor was repeatedly raided by Assyrian troops, as recorded in the inscriptions of Adad-nerari II (r. 911–891 B.C.; Grayson 1991: A.0.99.2: 24; A.0.99.4: 14') and Assurnasirpal II. It was now part of a region known as Mazamua, which the Assyrians identified with ancient Lullumu (= Lullubum). The equation is beyond doubt from a passage in the "Letter to God Aššur" of Sargon II (r. 721–705 B.C.; Thureau-Dangin 1912: l.11: "Lullumu, which they call Mazamua") and because the two place names were used interchangeably in the titles of some governors of Mazamua (see below). Lullumu was clearly seen as an archaizing term reserved for literary language; it is not used in archival texts.

The Assyrian reports describe Mazamua as politically fragmented into a number of principalities. According to the accounts of the campaigns of 881 and 880 B.C. in Assurnasirpal's inscriptions (Grayson 1991: A.0.101.1: ii 23–86; A.0.101.17: ii 77–iii 26), these include:

- The land Dagara, controlled by sheikh (*nasīku*) Nur-Adda.
- The city Bunasi, and its hinterland, controlled by Muṣaṣina.
- The city Larbusa and its hinterland, controlled by Kirtiara.
- The city Ammali and its hinterland, controlled by Araštua.
- The city Zamru and its hinterland, controlled by Ameka the Mazamuan.
- The city Arzizu and its hinterland, controlled by Ata.

The toponyms recorded here, and in the other Assyrian sources, are in the main not attested in the older records, with two notable exceptions, both the names of mountains. Mount Nimuš[24] is

[24] Previously read Mount Niṣir.

attested since the Old Babylonian period and used also in Assurnasirpal's inscriptions, where it is pointed out that the locals used a different designation: "Mount Nimuš which the Lullubeans call Mount Kiniba" (Grayson 1991: A.0.101.1: ii 34). According to the canonical version of the Gilgameš Epic, this is where the flood survivors landed their vessel (George 2003: 712–13:XI 142–46). Assurnasirpal's account of the campaign of 881 B.C. allows the identification of Mount Nimuš with the impressive peak of Shakh-i Pir-a Magrun (Saporetti 2001: 112–13, 127; George 2003: 516, as "Pir Omar Gudrun"; Fig. 4: "M. Pira Magrun" near Zewiya). The other mountain is Mount Nišpi, which certainly corresponds to Mount Nišba, the deified mountain worshipped in the kingdom of Simurrum (see above). The Assyrian sources allow its identification with the Hewrman range, just beyond the Iranian border east of Khurmal (Speiser 1926/7: foldout map; Liverani 1992: 49–50; Fig. 4: "M. Hewrman" near Khurmal).[25] But other than that, as the analysis of Ran Zadok (2002: 91–95) highlighted,[26] there is no continuity in the toponymy. The obvious exception are intentionally archaic regional names such as Lullumu (< Lullubum) or Gutium, which are used in the poetic language of literary compositions and royal inscriptions, in the same way that, for example, Britain can be called Albion. Among the small number of personal names attested for the region, mostly local rulers, there are a few Iranian examples (Zadok 2002: 92–93; the clearest example is Araštua, ruler of Ammali) but far more belong to an unidentified language (Zadok 2002: 93, esp. on the names with the element *tiara*, e.g. Kirtiara of Larbusa).

While the principalities documented by Assurnasirpal's inscriptions make up Mazamua, only Ammali, the capital of Araštua's realm, is situated in the Shahrizor Plain. The other principalities are located in the mountainous regions surrounding the plain (cf. Speiser 1926/7; Liverani 1992: 45–56): Dagara takes up the region of the upper valley of the Aw-a Spi River (Arabic Adheim, Assyrian Radanu; Levine 1989: 86), west of the Qara Dagh range where this watercourse is known under the name Tainal (Fig. 4). Bunasi, Larbusa and Zamru are situated in the Shar Bazher (Fig. 4), the north-east part of the province of Sulaymaniyah between the Azmir range and the border with Iran, which is traversed by various tributaries of the Lesser Zab that originate just west of Lake Zeribar (Edmonds 1957b); Zamru is in the region of Penjwin (Fig. 4). Arzizu is located beyond the Hewrman range in what is today Iranian territory. With ancient Simurrum, Mazamua therefore shared the Shahrizor and regions on the Lesser Zab, including the land of Idu (part of Mazamua according to the inscriptions of Shalmaneser III, r. 858–824 B.C.: Grayson 1996: A.0.102.6 ii 10–15), which centres on Satu Qala (van Soldt 2008; Meijer 2010; Fig. 4). But otherwise, its extent differs from Simurrum. Mazamua encompasses additional mountain regions, such as the Shar Bazher, but on the other hand it did not seem to include the Diyala valley downstream from Darband-i Khan.

While Simurrum was clearly a state, it remains entirely unclear what the term Mazamua implies. To the Assyrians, it was meaningful to group the subjects of the six rulers mentioned above together and classify them as Mazamuans, for example when discussing the deportees from that region that were settled in Kalhu, Assurnasirpal's new centre of the Assyrian realm (Grayson 1991: A.0.101.1: iii 134 and parallels). The use of this term predates the application for a province in the Assyrian administrative system and presumably is of local origin. But does it refer to a cultural identity or even political unity among the principalities or is it simply a geographical term? If one takes into account that the ruler of Zamru, in the eastern part of the Shar Bazher, is called "a Mazamuan", unlike any of the other princes mentioned in Assurnasirpal's account, then one can perhaps see this particular area as the heartland of Mazamua. We do not know at present which city constituted the administrative centre of the later Assyrian province of Mazamua.

Of the adversaries of Assurnasirpal, Nur-Adda is described as a tribal leader (*nasīku*; presumably of an Aramaean population group, on account of his name),but the other leaders are not given a

[25] Frayne (2011: 509) rejects this location explicitly in favour of an identification with "the imposing peak of Šāhābuddin located some 34 kms northeast of Sulaimānīya". This mountain name cannot be found on the maps of the region (or on Google Earth), but on the basis of his description one must assume that he refers to one of the peaks near Chwarta / Qala Chuwalan (cf. Fig. 4). Frayne does not give his arguments for this proposal. On the basis of the Neo-Assyrian sources, which Frayne does not consider, it seems justified to maintain Mount Nišpi's identification with the Hewrman range.

[26] These results are in sharp contrast with the assumptions of Frayne (1992: 72–85), who sees connections between geographical lists of the third millennium B.C. and place names attested in the Neo-Assyrian evidence. Note that in an even more extreme approach, Frayne (2011: 511) proposes to link modern names with names attested in Ur III sources.

specific title. One is, however, reminded of the 8th century descriptions of "city lords" that the Assyrians encounter at the other side of the Zagros (Radner 2003: 49) and a city lord of Mazamua is indeed attested in the 7th century, as one of those swearing to honour the succession arrangements of Esarhaddon of Assyria (r. 680–669 B.C.; Parpola and Watanabe 1988: no. 6, manuscript a: 3: ^{PN}*la-ar-ku-ut-la* LÚ.EN–URU KUR.*za-mu-u-a*). This also highlights that after the creation of the Assyrian province of Mazamua in 842 B.C. during the reign of Shalmaneser III (Radner 2006: 51–52), certain local power structures remained in place, just as they did in the Assyrian provinces east of the Zagros. This is despite the fact that various groups of deportees, such as five thousand Arameans from Babylonia (under Tiglath-pileser III, r. 744–727 B.C.: Tadmor and Yamada 2011: no. 5: 10), were settled there. Apart from its importance as a traffic node, Mazamua offered excellent farmland and was also a wine-growing region (Levine 1989: 88), indicating favourable watering or climate conditions in the region.

Once established as a province, Mazamua was part of the Assyrian Empire until its fall in the late 7th century B.C. A sale document for a field of 30 homers excavated at Sitek near Sulaymaniyah (see above, p. 8) dates to this period (date lost). Six governors of Mazamua are known by name, having served as year eponyms (for references for the first five see Millard 1994):

– Bel-qate-ṣabat, eponym of 810 and Šamši-Adad V's governor of Mazamua
– Ninurta-naṣir, eponym of 783 and Adad-nerari III's governor of Mazamua
– Aplaya, eponym of 768 and Aššur-dan III's governor of Mazamua
– Aššur-da''inanni, eponym of 733 and Tiglath-pileser III's governor of Mazamua; some of his letters to the king have survived (ND 2711, ND 2454) and he is given a prominent role in his king's inscriptions (Radner 2003: 48).
– Šarru-emuranni, eponym of 712 and Sargon II's governor of Mazamua; some of his letters to the king have survived (Lanfranchi and Parpola 1990: no. 199–209)
– Šarru-metu-uballiṭ, eponym of c. 633 and Assurbanipal's governor of Mazamua (Donbaz and Parpola 2001: no. 135: s. 3–4: ^{PN}LUGAL–ÚŠ–TI.LA *ša* KUR.*za-mu-u*: not in Millard 1994).

As Louis D. Levine (1989: 88) stressed, the eastern border of Mazamua was in flux and the regions beyond the Hewrman range were not always under Assyrian control, although they certainly were in the late 8th century B.C. when Tiglath-pileser III and Sargon II added territories including and beyond Lake Zeribar. But despite the fluctuating border, the Shahrizor was certainly never lost and from the 9th century B.C. onwards it served as Assyria's preferred gateway across the Zagros. The route over the Bazyan Pass and the Tasluja Pass (Assyrian: "Passes of Babite"; Fig. 4) across the Shahrizor to Lake Zeribar (Assyrian: "Sea of Inner Mazamua"; Levine 1973: 20–21[27]) is described in a detailed itinerary (Levine 1989), which maps stages on the royal road network. The Shahrizor route was not only used by the individual traveller, but for major military campaigns in that direction. It was here, in the spacious and fertile plain, that the army gathered. This is clear, for example, from a passage in the inscriptions of Assurbanipal (r. 668–627 B.C.), who on his way to invade Mannea (a territorial kingdom centred around Bukan, south of Lake Urmiya; cf. Hassanzadeh and Mollasalehi 2011) set up camp in Dur-Aššur (Bakr Awa = SSP 10, see above). Pre-empting their offensive, the Mannean army attacked the Assyrian forces under cover of night but despite this, they lost the ensuing battle. Says Assurbanipal, "Over a distance of three *bēru* (= *c.* 33 km) they filled the wide plain with their corpses (Borger 1996: 33, 220: Prism B iii 30 and parallels)". The Assyrian army subsequently crossed into Iran and invaded defenceless Mannea.

That the Mannean forces had been able to launch a surprise attack on the Assyrian army on, importantly, Assyrian territory, highlights that the Shahrizor offered good access from Iran to Mesopotamia. We can only speculate about the itinerary of the Median forces of Cyaxares on their way to sack Assur in 614 B.C. but it is likely that their route led through the Shahrizor. Despite its proximity to the Median heartland, we find that subsequently, Mazamua belonged to the Neo-Babylonian Empire, at least during the reign of Nebuchadnezzar II (r. 604–562 B.C.). One of his inscriptions lists

[27] Medvedskaya 2000: 435–36 rejected this in favour of the identification of the Sea of Inner Mazamua with Lake Urmiya. But her geographical reconstructions have been invalidated by the recent discoveries at Satu Qala (Fig. 4), which allow the localisation of Idu at that site. Medvedskaya placed Idu near Urmiya.

those in the realm who have contributed to the restoration of the Nabu temple of Borsippa, among them the "legitimate governor" (*šaknu kēnu*) of Mazamua (Vanderhooft 1999: 92). This is a unique title that is not attested elsewhere. It would seem to imply the dynastic legitimacy of the ruler.

The Shahrizor from the Achaemenids to the Arsacids

Relatively little is known about the Shahrizor under Achaemenid, Hellenistic, and Parthian rule. Within the Persian Empire, the Shahrizor certainly had key importance as a corridor from Northern Mesopotamia into Iran, just as under Assyrian rule. The leg of the Persian imperial route network linking Sardis in Anatolia with Susiana led through the Shahrizor, as the route described by Herodotus (Histories V 52; cf. Kuhrt 2007: no. 15.3) requires crossing of both Zab rivers and then of the Diyala (Gyndes) before entering the Zagros range (Matieni). After the defeat at Gaugamela in 331 B.C., the army of Dareios III (r. 336–330 B.C.) took the route through the Shahrizor on its way from Arbela (Erbil) to Ecbatana (Hamadan) (Diodorus Siculus XVII, 64.1–2; Kuhrt 2007: no. 10.26; cf. Sachs and Hunger 1988: no. 330: 18; Kuhrt 2007: no. 10.27).

At that time, the Shahrizor was the western-most part of the Persian satrapy of Media, which otherwise consisted of territories at the eastern side of the Zagros. But beyond that, little is known. Whether the decorated rock tombs of Ishkewt-i Qizqapan and Ishkewt-i Kur-u-Kich (Edmonds 1934; von Gall 1988) on the south face of the Surdash mountains, near Zarzi (Fig. 4) and high above a gorge through which the river Surqawshan forces its way towards the Lesser Zab, date to the Achaemenid (von Gall 1988) or Hellenistic/Arsacid period (Boyce and Grenet 1991: 94–106) is debated.

The Shahrizor under Arsacid rule is illuminated by the Avroman Parchments, named after the Hewrman (= "Avroman") range, and which were discovered in a cave at Kuh-e Salan on the Iranian side (Minns 1915; Canali de Rossi 2004: 265–69, no. 454–55; Shayegan 2011: 195–96, 317–18; Rougemont 2012: 151–54, no. 73–74). All three of these legal documents invoke Arsacid rulers; two are written in Greek, dated to years 225 and 291 of the Seleucid Era (= 88/7 and 22/1 B.C.; British Library, Add. MS. 38895A–C), and one in Parthian, dated to year 300 of the Arsacid era (= A.D. 33; British Library, Or. MS. 8115). They are property deeds for vineyards which, if the arguments of Edmonds (1952; 1957a: 360–64) for the identification of the village Kop(h)anis and the hyparchy of Baiseira/Basiraora are accepted, were located in the Qara Dagh plateau (Fig. 4). The mention of the post stations (*stathmos*) Baithabarta and Dasakdis stresses the continuing importance of the region in the overland route system. While the names of the individuals mentioned in these texts are Iranian, the use of Greek for legal purposes and the use of Greek administrative terminology highlight the lasting impact of Hellenistic governmental practice in the region and draw attention to the likely presence of Greek cities (*poleis*) in the region (Polybios X, 27.3 on the foundations of Alexander the Great in Media; cf. Shayegan 2011: 196 n. 599).

In 2009, a small mountain settlement was excavated on Qimmat Mirquri (or Merquli), the peak just south of Mount Pir-a Magrun, by a team from the Sulaymaniyah Board of Antiquities, directed by Zuhair Rajab. The settlement has been attributed to the Parthian period because of a nearby rock relief (Fig. 5) that oversees the entrance to the mountain valley of Zewiya (Fig. 4), which shows a man in Parthian royal dress facing towards the valley (Zuhair Rajab pers. comm.; Zamu and Amedi 2011). There is no inscription and at present it must remain open whether this image shows one of the Arsacid kings or a local ruler.

The Shahrizor under Sassanian rule

The toponym Shahrizor, as Syrazur, is first attested in the Sassanian period. It is the name of a province in the satrapy of Media. The attestation in the inscriptions of the monument of king Narseh (r. 293–302) at the Paikuli pass across the Qara Dagh (Skjærvø 1983:§32; cf. Edmonds 1957a: 164–67; Fig. 4) shows that it is located near the monument[28] as its inhabitants are summoned to meet Narseh there to celebrate his proclamation as King of Kings.

From the reign of Kawad I (r. 488–31) onwards, Shahrizor is also attested as the name of a city in the eponymous province. Writing in the 10th century, Ibn al-Faqih attributes in his *Kitab*

[28] The disassembled monument is now in the Archaeological Museum of Sulaymaniyah.

Fig. 5 The Parthian-period rock relief at Qimmat Mirquri (or Merquli) in September 2011.

al-Buldan ("Book of lands") the foundation of the city of Shahrizor to Kawad I, as does Hamdallah al-Mustawfi in the geographical section of his 14th century work, *Nuzhat al-Qulub* ("Pleasure of the hearts") (Safar 1974: 196). According to the *Mu'jam al-Buldan* ("Dictionary of countries") of the geographer Yaqut al-Hamawi (13th century), a report by the Arab traveller Ibn Muhalhil from the 10th century, when describing the many settlements of the Shahrizor, notes that the capital city of the same name was known to the Persians as Nimrah, "Halfway House", because of its location halfway between Ctesiphon (Madain) and Takht-i Sulayman (Shiz) on the pilgrimage route that each newly crowned Sassanian ruler had to walk on foot in order to visit the great fire-temple of Shiz (Le Strange 1905: 190, 224; Safar 1974: 193; Barthold 1984: 208). The bridge of Pird-i Kinachan, which crosses the Sirwan branch of the Diyala and leads via Bakr Awa to Khurmal (Safar 1974: pl. 33; Fig. 4), has been convincingly connected with this route by Fuad Safar, who recorded the remains of the bridge before it was flooded after the construction of the Darband-i Khan Dam, and this supports the view that the city of Shahrizor should be identified with the tell at the town of Khurmal (Madhloom and Yasin 1970:pl. 2) rather than the mound of Yasin Tepe (SSP 2; Fig. 4), as often assumed (e.g. Le Strange 1905: 191 n. 1; references in Safar 1974: 197).

Shahrizor in the Abbasid and Ilkhanate Periods

After the Muslim conquest, the Shahrizor region belonged to the province of Mosul. In the reign of al-Mahdi (r. 775–785) or possibly that of Harun al-Rashid (r. 786–809) it was combined with the neighbouring regions of Ṣamaghan and Darabadh (Robinson 2000: 24–25) to form a separate administrative unit, called Shahrizor. It was part of Al-Jibal, "The Mountains" (Christensen 1993: 151, table 9 for the Shahrizor's tax assessment for the years 788, 819/20 and *c.* 840).

At this time, Shahrizor is attested as a see of both the Jacobite and the Nestorian church. The Jacobite see was established in the 7th century by Mafrian Marutha (in office 629–648; Fortescue 1913: 329, 340) but proved short-lived, with the last bishop of Shahrizor, John, active in 793–817 (Fiey 1993: 267). The Nestorian see, established during Sassanid rule, is still listed in the *Synodicon Orientale*, a see register from the 9th century (Chabot 1902; Christensen 1993: 312 fn. 10).

In the geographical treatise *Ṣūrat al-'Arḍ* ("The Face of the earth"), Ibn Hawqal describes the city of Shahrizor in the 10th century as fortified and inhabited by Kurds of various tribes who occupied

the fertile region surrounding the city (Le Strange 1905: 190). We have already mentioned the 10th century traveller's report quoted by Yaqut commenting on the many settlements of the Shahrizor Plain; in addition to Shahrizor itself, Ibn Muhalhil mentions Dailamistan, Bir and Duzdan by name, probably because he visited these towns.[29] Also, according to his report, the Kurdish tribes came down from the mountains to winter in the plain, their tents then numbering 60,000 (Le Strange 1905: 191; Safar 1974: 196). In the late 10th century, Ibrahim bin Marsuban of the Sallarid dynasty of Azerbaijan was able to temporarily extend his control to include the Shahrizor (Barthold 1984: 217 n. 18). A copper coin issued by Muzaffar al-Din Kökbüri, the Begteginid ruler of Erbil (r. 1190–1233; Kaptein 1993: 40–41; Morray 1994: 85), was found during the Iraqi excavations of Bakr Awa (Madhloom 1965: 78, pl. 4/2 no. 6) and raises the question of the nature and extent of Begteginid influence over the Shahrizor.

Writing after the Ilkhanate Mongol conquest of the Abbasid caliphate in 1258, Hamdallah al-Mustawfi still describes Shahrizor as a flourishing city inhabited by Kurds (Le Strange 1905: 191).

The principality of Ardalan, the Ottoman Empire, and the Baban Dynasty

Toward the end of Ilkhanate rule, the Shahrizor became independent under the Kurdish tribal leader Baba Ardalan, as reported by 16th century historian Šaraf al-Din in the *Šaraf-nāma*, his Persian-language history of the Kurds. In the 14th century, after having extended its rule northwards to the Greater Zab, the Ardalan dynasty gained control also over the region beyond the Hewrman range and established itself in Senna (modern Sanandaj in Iran), which was made the capital of their state (Oberling 1988: 693; Longrigg 1925: 6–7).

In 1538, Sultan Sulayman the Magnificent sent the Ottoman army for the first time against the Ardalan principality, then allied with the Safavid Dynasty of Iran, in order to conquer the Shahrizor. It took several attempts before this succeeded but by the end of the 16th century the Shahrizor belonged to the Ottoman Empire. Its territory was combined with that of Kirkuk to the west, beyond the Qara Dagh range, into the province of Shahrizor. The native Kurdish elites continued, under the supervision of the Ottoman governor-general of Mosul, to exercise local governance and tax collection in return for protecting the Ottoman interests against Iran (Raymond 1996: 122; Çetinsaya 2009: 272–73).

The city of Shahrizor was now a frontier fortress (Khoury 1997: 48). By the second half of the 17th century, the Shahrizor was increasingly exposed to direct Ottoman influence and the governor-general of Mosul was, for example, directly responsible for the maintenance and provisioning of the fortified city of Shahrizor (Khoury 1997: 52), then a kingpin in the war against Safavid Iran.

During a visit to the imperial court at Istanbul in 1678, the Kurdish leader Sulayman Baba secured the dynastic rights of his family to rule over the Shahrizor in recognition of his military achievements against Iran and especially its vassal, the Ardalan principality (Rich 1836: 81; Longrigg 1925: 80–81; Edmonds 1957a: 52–53). He is the founder the Baban dynasty that controlled a region that corresponds closely to the province of Sulaymaniyah in today's Kurdish Autonomous Region of Iraq, and at times reached beyond that area (Longrigg 1925: 179).

The Baban dynasty effectively gained independence from the Ottoman Empire in the last decade of the 17th century, but their principality still functioned as an efficient buffer against Iran, despite following an opportunistic strategy that saw some Baban rulers, or their family members, on occasion openly cooperate with this arch-enemy of the Ottomans (e.g. Longrigg 1925: 159, 183; Khoury 1997: 85). The Ottoman authorities attempted to exercise some measure of control by reducing the Baban rulers' fiscal base, alienating land holdings previously tied to the Shahrizor to loyal Mosul families (Khoury 1997: 91, 216 no. I). The Shahrizor under Baban rule saw its share of Iranian incursions, for example when Nadir Shah, who had usurped the throne of Iran after the end of the Safavid rule, marched against Mosul in 1743 (Khoury 1997: 169). But the region retained its autonomy until 1850 (Çetinsaya 2009: 274) when it was brought under the direct control of the Ottoman Vilayet of Mosul, ending Baban rule.The first Baban capital was not in the Shahrizor but at Qala Chuwalan (also Qara Cholan; Fig. 4) in the mountainous Shar Bazher region. Separated from the plain by the Azmir range but with easy access through either the Haruta or the Azmir pass,

[29] Safar 1974: 197–98 suggests identifications for Dailamistan, Bir and Duzdan as well as the towns of Tiranshah and Qinna, which are known from other Arab sources.

Qala Chuwalan is located where the rivers Gogasur and Alasiyaw meet to form the eponymous Qala Chuwalan river, a tributary of the Lesser Zab (Edmonds 1957a: 53; 1957a: 319 and map). The city of Sulaymaniyah, named after the founder of the Baban dynasty, was established as the Shahrizor's new capital in 1784, not far from Qala Chuwalan but down in the plain at the other side of the Azmir and Haruta passes on the location of the village of Malkandi. The city has been the region's political, economic, and cultural centre ever since. Claudius James Rich's report on his stay at Sulaymaniyah from 1820–21 (Rich 1836) is an invaluable source for the history of the Shahrizor at that time (cf. Nieuwenhuis 1982).

Archaeological work in the Shahrizor and its significance

Travellers' accounts and archaeological investigations in the 19th and early 20th centuries (Rich 1836; Jones 1857; Speiser 1926/27) discuss tell sites in the Tanjero River Valley and the Shahrizor Plain. These early studies were mainly concerned with the identification of toponyms from historical sources and some undocumented small scale excavations, conducted in the hope of finding cuneiform inscriptions, represent the first archaeological research in the Shahrizor region. More systematic investigations were initiated during the 1940s by the Iraqi Directorate of Antiquities and Heritage in order to document archaeological sites and their datings all over Iraq, including the Shahrizor Plain (Directorate General of Antiquities 1970: 334, 342–45). Later, between 1956 and 1961, the construction of the Darband-i Khan Dam led to a salvage survey and rescue excavations in the south-east part of the Shahrizor. Many of the sites investigated in these projects are referenced within the Archaeological Sites of Iraq (ASI) and the Atlas of Archaeological Sites in Iraq (AASI) publications. During these larger salvage investigations, two seasons of Iraqi excavations were carried out at Bakr Awa (SSP 10), 7.3 km northwest of Halabja. In the northern lower town, a substantial private building was unearthed (formerly interpreted as temple and dated to the Old Babylonian period: Heinrich 1982: 196; Miglus 1999: 49–50), while a sounding on the slope of the settlement mound reached layers dating from Islamic to the Akkadian periods (with only Islamic remains published: Husaini 1962; Madhloom 1965). Late Chalcolithic finds from the second season were reported by Behnam Abu al-Soof (Soof 1964: 40–41; Soof 1985).

Other smaller excavations include Tell Shamlu (Janabi 1961) and Tell Bagum, both in the northern Darband-i Khan Dam area (Directorate General of Antiquities 1961: 221; Hijara 1997:127–29; marked in Fig. 1). Six more sites in the dam region were excavated but published only in notes: Tell Qortas (تل قورتس), with second millennium B.C. and Islamic layers; Hussain Fattah (حسين فتاح) with prehistoric and late third millennium B.C. layers; Gird-i Sharif (SSP 18; surveyed in October 2009[30]) with reported Islamic layers (for Ottoman occupation see below); Duwanza Imam (امام / دوانزه امام عشر الاثنى) with Late Chalcolithic and Islamic layers; Tholima (طلمه) with pre-Islamic and Islamic ceramics; and Tell Chragh (تل چراغ) with Ubaid and late third millennium B.C. layers (Directorate General of Antiquities 1960; Directorate General of Antiquities 1961). The excavations of the Directorate General at Tell Arbat in 1973 uncovered Late Chalcolithic, late third millennium B.C., and Islamic layers (Salman 1973; Hijara 1975). In Gird-i Resh (SSP 7), architectural exposures revealed two heavily disturbed late third millennium B.C. levels on top of a Late Chalcolithic layer with residential architecture (Hijara 1976).

After the 2003 invasion, the Directorate of Antiquities and Heritage in Sulaymaniyah began excavations in Greza (2003, SSP 9), Arbat (2004), and Tanjero (2008) in the Shahrizor as well as Mirquri / Merquli (2009), Sitek (2010), Bawageldi, and Bawa Merda (2010) in other districts (Fig. 4). The University of Heidelberg resumed excavations on the site of Bakr Awa in 2010 (Miglus *et al.* 2011). The Shahrizor Survey Project (SSP) has been conducted since 2009, with the goal to better understand settlement development in the region, human impact on landscape formation and socio-economic interaction with the environment. Figure 6 compares the results of the settlement trends according to the Iraqi Atlas of Archaeological Sites (based on 111 sites) to the preliminary results of the Shahrizor survey (based on 30 sites) and summarizes the number of sites found so far for different periods.

[30] This is actually a complex of three sites: one larger mound with a lower town (Kara Tepe) and two smaller low mounds with graveyards (one of which is called Gird-i Sharif). It is riddled with looter pits, presumably dug in the late 1980s when many sites were looted to serve the antiquities market.

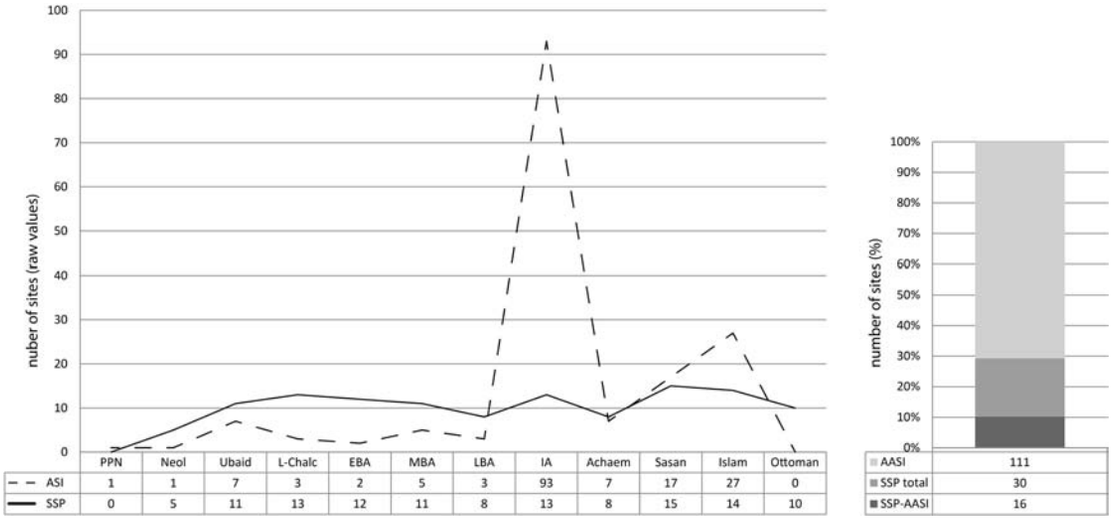


Fig. 6 Graph of sites per period in the Shahrizor Plain according to collected material from the SSP in 2009/11 and in comparison to the ASI.

Survey method

The archaeological survey is comprised of on-site as well as off-site investigations. Prior to fieldwork, archaeological sites were located and mapped using CORONA imagery. Based on this, 16 of 30 sites investigated in 2009–2010 had been previously unknown (Fig. 6), emphasising the high site detection success rate through remote sensing.

In many ways, the distribution of sites that have been investigated so far is the result of practical considerations, such as accessibility of sites during different seasons. Certain sites are only accessible during the dry season (e.g. Yasin Tepe = SSP 2 cannot easily be reached until late in summer). Therefore, many of the sites surveyed in 2009 are located within easy reach of the highway between Sulaimaniya and Halabja. Visits in the second season in 2011 followed a mountain road west of Darband-i Khan from where a track along the shoreline of the dam lake allows access to several sites. In addition, two major cave sites were visited in 2011 at Khan Ahmed Khan (Fig. 1: C1) near Khurmal and Sa'id Sadeq (Fig. 1: C2), 16 km northwest of Khurmal, with finds of some lithic materials and occasional Ottoman clay pipes from more recent visitors. Since many caves are along the border between Iraq and Iran and therefore not easily approachable, only cave sites in readily accessible areas have been visited so far: both caves are local tourist attractions and popular picnic areas.

The survey methods applied in the field are partly based on results from several models tested in 2009. A standard mainly based on techniques applied and evolved from British landscape archaeology by teams working in the Syrian and Iraqi North Jazira (e.g. Wilkinson 1982; Ball *et al.* 1989; Wilkinson 1989; Wilkinson and Tucker 1995) was chosen in 2011, which also keeps data statistically comparable to these earlier works. In general, only diagnostic sherds are collected (rims, bases, decorated body sherd fragments, spouts, handles, lids), counted, and weighed in the field. Insignificant diagnostics (e.g. too small or too battered) are sorted out; the other sherds are washed, drawn, and photographed. Bricks are also collected, photographed, and arranged in groups within the sample grid in order to document volume per grid. Other significant features, such as changing soil colour, clusters of worked stones, etc., are also recorded. All sampling walks, as well as photographs of archaeological features, are geo-tagged with UTM coordinates. Sites are surveyed by systematically walking in several linear transects starting from the centre of the site and arranged into a survey grid of 5×5 m. The length of each transect depends on the decline of diagnostic sherd counts; walking ends when collections result in a value below that indicating significant settlement remains ($\geq$3 diagnostics). Collections on the settlement mounds themselves are separated into general areas that include base, middle, and top collections if possible. As many tell sites in the Shahrizor have steep slopes, making walking there dangerous, such sites are divided into base and top collection areas only. It is not possible to apply horizontal collection units (cf. Ball *et al.* 1989: 20–24; Bernbeck

1993: 20) due to the conical mound shapes, with top sections often measuring far less than 1 ha. Off-site walks follow a random set of lines with 5×5 m grids over a length of 50 m. So far only two off-site units have been collected, but this kind of investigation will be intensified in upcoming campaigns in order to gain a clearer picture of land use in connection to the environmental data discussed earlier (including establishing how local sedimentation processes relate to field scatters; see above).

Post-processing includes digitisation of spatial and quantitative data (artefact counts and weights in automatically calculated classes as well as single categories) placed in the project's Geographical Information System (GIS) database, while detailed data on pottery (such as wares, shapes, classification, etc.) are kept in a separate database, which can be joined with the GIS database as and when needed.

Early settlement of the Shahrizor Plain

During the seasons in 2009 and 2011 thirty archaeological sites were surveyed, with site dates ranging between the Neolithic and late historic periods (Figs. 1, 6). Amongst them are sixteen sites, most of them in the south-eastern part of the plain, which had not been recorded by Iraqi survey teams during the 1940s (cf. Fig. 6). Most sites investigated so far show multi-period settlement. In investigating the early stages of human settlement, the visibility of archaeological sites becomes a major issue. Various factors affect visibility, including the relative prominence of mounds in specific periods, coverage of early period sites by later multi-period mounds and, in particular, environmental processes of erosion and sedimentation. Preliminary palaeoenvironmental investigations (see above) indicate that in at least some parts of the Shahrizor significant alluvial deposition may have buried earlier Holocene sites. We suspect from initial results from the deep trench (Figs. 1–3; see above) that in many areas in the plain the prehistoric periods are buried deeply, effectively pushed beyond practical archaeological recovery. On the other hand, sites situated on the Pleistocene terraces tend to be far more visible.

The relative degree of visibility and the biased retrieval rate of early settlements is reflected in the artefact counts for successive periods (Fig. 7). The material recovered from these sites, mostly pottery sherds, is being analysed according to a developing ceramic-classificatory framework, using categories produced from excavations in the region. If we simply count the numbers of sherds attributed to, respectively, the Late Neolithic and the Ubaid/Late Chalcolithic stages, this shows that while recovery rates are low across the board, the earlier Late Neolithic period is less visible than the Ubaid/Late Chalcolithic. In fact, most sites are identified by less than a handful of sherds. The survey yielded many multi-period sites with prehistoric roots suggested by very low densities of early material.

Keeping the issue of visibility in mind, the earliest traces of settlement in the SSP have so far been found at just one site, Bestansur (SSP 6). The site is a small mound of 80 m in diameter, lying close

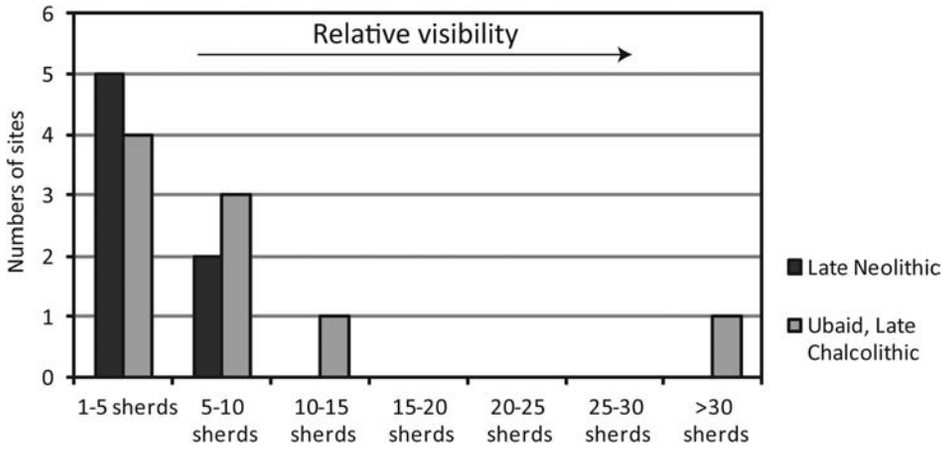


Fig. 7 Numbers of sherds per site counted for the Late Neolithic and Ubaid to Late Chalcolithic periods after the 2011 campaign, showing the relative visibility of these two stages.

to a small, perennial tributary of the Tanjero River. Although sherds from the mound's surface date to the Neo-Assyrian, Achaemenid, and Parthian/Sassanian periods, much older traces of settlement were found in field scatters close to the tell. In a 5 × 5 m sample grid, a few Late Neolithic pottery sherds were found as well as a remarkable quantity of stone tools. The geometric microliths of obsidian and chipped flint tools closely resemble material from the Pottery Neolithic occupation of Jarmo (Fig. 8; Hole 1983). Admittedly, the proportion of obsidian in the chipped stone collection made at the site is much lower than that attested in the various levels at Jarmo (Fig. 9). Apart from potential chronological differences, this might be due to the lower recovery rate of microliths in surface collections. The earliest occupation at Bestansur certainly dates to the Pre-Pottery Neolithic.

Six Pottery Neolithic sites are attested in the Shahrizor so far. The earlier stages are attested by coarse plant-tempered pottery dated to the seventh and early sixth millennia B.C. (Fig. 10). Similar plant-tempered coarse pottery is found in a vast distribution across the Northern Levant, Upper Mesopotamia, and the Western Zagros (Mortensen 1970; Voigt 1983; Nieuwenhuyse 2007, 2009). Vessel shapes are typically simple, and very often have irregular rims and roughly finished surfaces. Again, the best collection in the survey thus far comes from Bestansur, which yielded a number of bowls, collared jars, and large, thick-walled base fragments closely comparable to material from Jarmo, Ali Agha, and Shemshara (Mortensen 1970; Adams 1983; Caldwell 1983). Most interestingly, a base fragment from Bestansur contained the imprints of woven tissue pressed against the exterior surface of the vessel (Fig. 10:3, 9). A preliminary inspection suggests that these are imprints of a net, possibly used for fishing (Nieuwenhuyse et al. In press). The later stages of the Late Neolithic are represented by a few finds of possible Proto-Hassuna Pottery at Qara Gol (SSP 21). In addition,

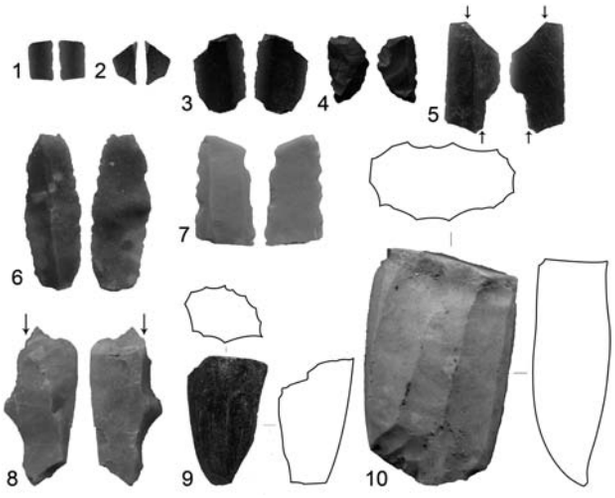


Fig. 8 Lithic assemblage from Bestansur (SSP 6).

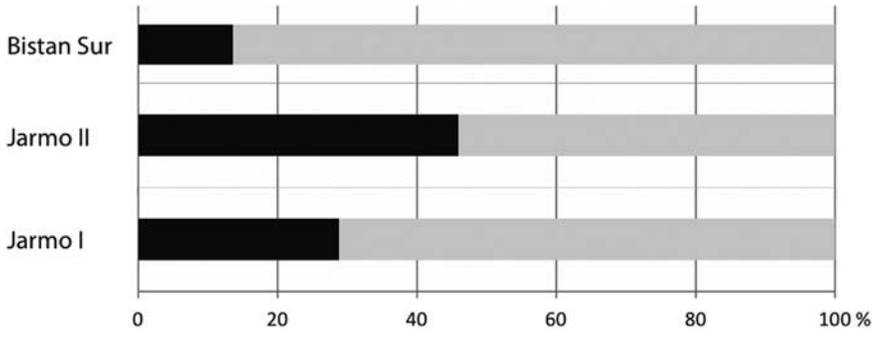


Fig. 9 Percentage of obsidian (black) and flint (grey) tools collected from Bestansur (n = 250) and excavated from Jarmo (II: n = 72069, I: n = 21170; after Hole 1983: 240, table 4).

four sites yielded fragments of the low, thick-based oval trays with corrugated interiors, known in the archaeological literature as "husking trays" but really of obscure purpose (Lloyd and Safar 1945; Voigt 1983). So far, such objects have been recovered from Gird-i Qulkhurd (SSP 19), Gird-i Shakar (SSP 24), Qalbaza (SSP 25), and Bakr Awa (SSP 10), where the fragment found was not recovered *in situ* but in debris from much later periods (Fig. 12: 1).

Somewhat intriguingly, Hassuna Fine Ware and Samarra Fine Ware pottery are not attested thus far, with the exception of two possible Hassuna Incised Standard Ware sherds from Gird-i Shakar (SSP 24) and Qalbaza (SSP 25). Yet excavations at Shemshara on the Rania Plain (Mortensen 1970), Matarra south of Kirkuk (Braidwood *et al.* 1952), and the Mandali region (Oates 1968) have shown that these early sixth millennium styles certainly reached the general region. Halaf pottery, too, is virtually absent so far in the survey materials: only a single sherd of possible painted Halaf Fine Ware was retrieved from Yasin Tepe (SSP 2). But Halaf material would be expected to be more unequivocally present in the survey as Ismali Hijara (1997: 242–44, fig. 109) has identified two major Halaf sites on the plain: Tell Bagum north of the Darband-i Khan Dam area (Hijara 1997: no. 204; Fig. 13) and Tell Sragon (Hijara 1997: no. 203)[31], which has not yet been relocated in the recent survey but should lie north of the tell cluster on the map detail in Figure 1. In addition, the excavations of the Sulaymaniyah Directorate of Antiquities since 2008 in Tanjero, a site north-west of Arbat (Zuhair Rajab, pers. comm.), have yielded further evidence for the existence of Halaf period occupation in the Shahrizor.

There are several reasons that may help explain the absence of these materials in the survey finds. In addition to site burial by sedimentation, the socio-economic organization of communities in the Shahrizor Plain in these periods may have limited their archaeological visibility. Recent work in

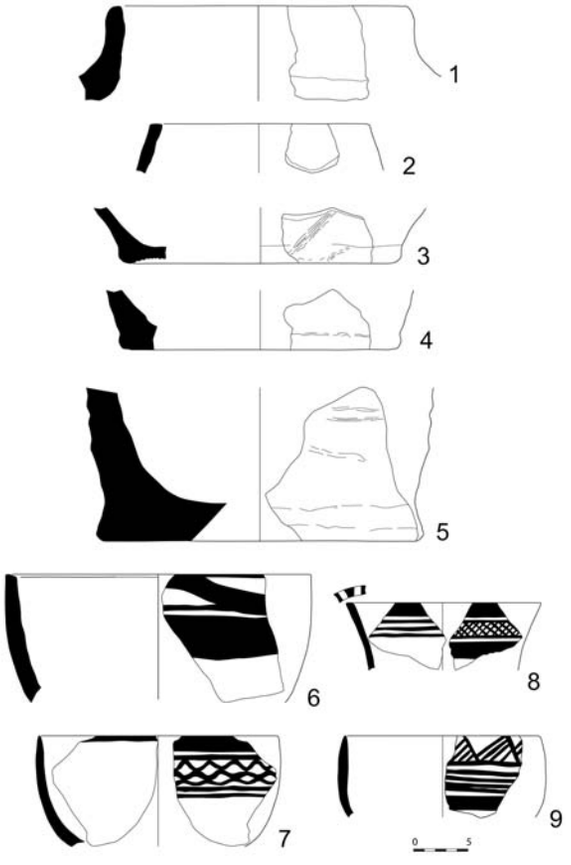


Fig. 10 Prehistoric ceramics collected during the SSP. Nos. 1–5: Coarse Ware (SSP 6, Bestansur) and nos. 6–9: Ubaid Fine Ware (Nos. 6-7, 9: SSP 11, Gurga Chiya; No. 8: SSP 1, Tepe Kal).

[31] AASI.86.24; ASI.334.99, with Halaf and Neo-Assyrian occupation according to the catalogue entry.

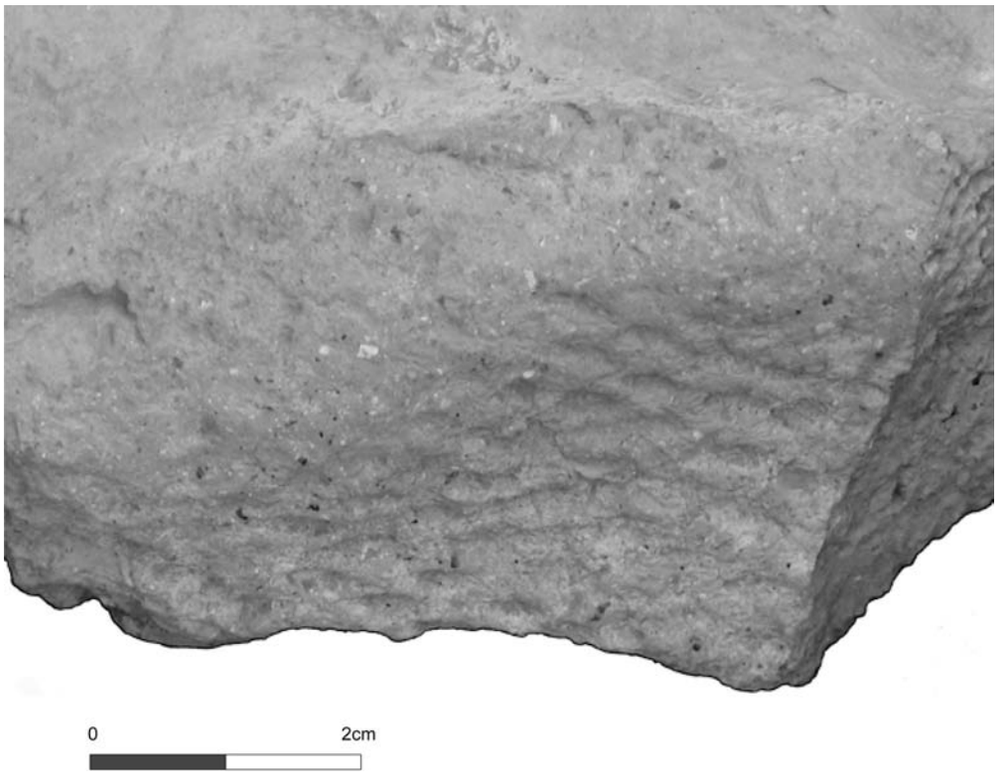


Fig. 11 The impression of, most likely, a net pressed against the exterior surface of a Neolithic Coarse Ware base fragment (from Bestansur = SSP 6; cf. Fig. 10:3).

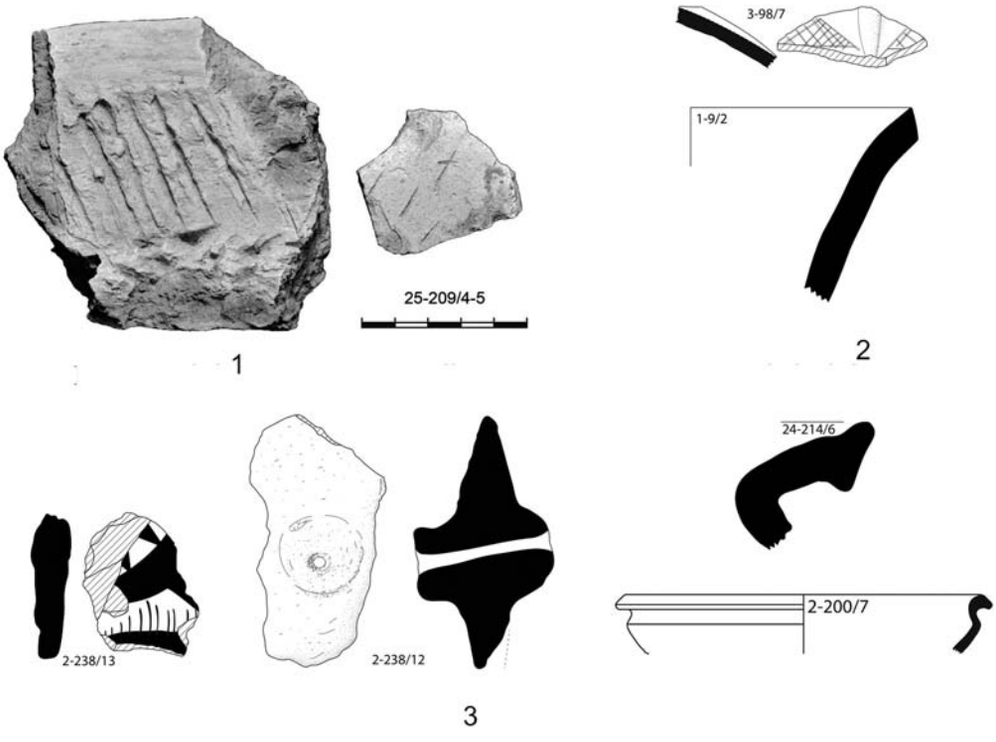


Fig. 12 Hassuna pottery (1) from Qalbaza (SSP 25); Chalcolithic pottery (2) from Marif Tepe (SSP 3) and Tepe Kal (SSP 1; beveled rim bowl); third millennium B.C. finds (3) from Yasin Tepe (SPP 2) and Gird-i Shakar (SSP 24).

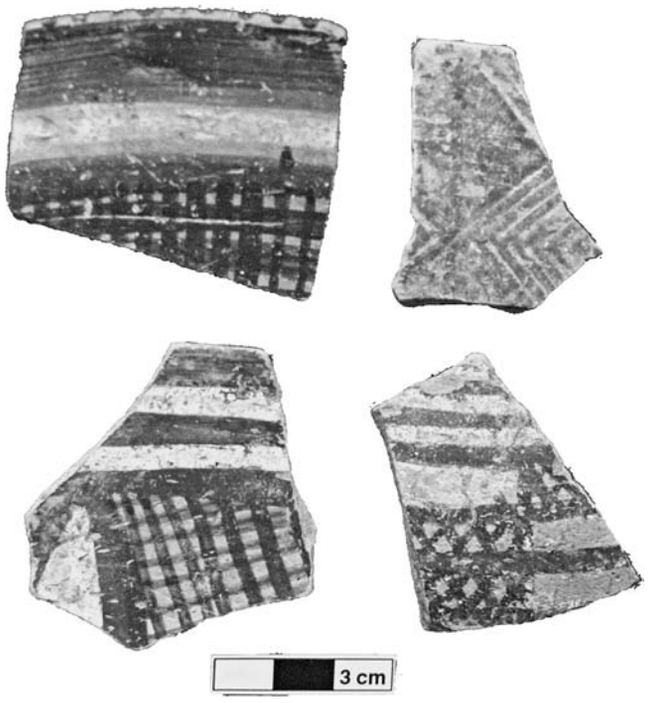


Fig. 13 Halaf pottery sherds from Tell Bagum (photo by Patricia Duff; courtesy Joan Oates, Cambridge).

Upper Mesopotamia suggests that patterns of Late Neolithic settlement became focused on small, low, and frequently shifting sites after 6200 cal. B.C. (Nieuwenhuyse 2007; Bernbeck 2008, in press; Akkermans in press). This shift may have been associated with a move to semi-pastoralist modes of production (Akkermans and Verhoeven 1995; Duistermaat in press). If a similar shift occurred on the Shahrizor Plain, this would certainly have limited the recovery rate of settlements from the Hassuna to Halaf periods. Future surveying will target parts of the plain such as higher Pleistocene terraces that are less buried by sedimentation, to capture at least some of these settlements.

The Ubaid period is much better represented in the survey (Fig. 10: 6–9). Characteristic painted and unpainted Ubaid Fine Ware shapes are attested at eleven sites. In this regard, at least, the Shahrizor Plain fares far better than the flood plains of Southern Mesopotamia, where Ubaid sites typically remain hidden below alluvial sediments (Adams 1981; Pollock 1999). Typologically, the Ubaid material compares well with that of the Hamrin (Jasim 1985). As with the preceding Late Neolithic stage, a combination of geomorphological and cultural factors may have contributed to the increased Ubaid recovery rate on the Shahrizor. On multi-period sites, the Ubaid levels were deposited at higher levels than Neolithic levels. Furthermore, work in Upper Mesopotamia has suggested a trend towards more nucleated, permanent settlement at the end of the Halaf period and into the Early Ubaid (Nieuwenhuyse and Wilkinson 2008; Trentin 2010). Although considerable parts of Ubaidian communities would still have been semi-pastoralist, communities may have settled more permanently on fixed locations after the Halaf period, increasing their chances of remaining (partly) visible during survey.

Most of the Ubaid mounds in the Shahrizor continued into the Late Chalcolithic. Moreover, many new settlements were founded during the Late Chalcolithic, bringing the total number of survey sites dated to the Late Chalcolithic to twelve. The collected material includes grey burnished pottery, red-slipped and burnished pottery, and hammerhead bowls. Most interestingly, a fair number of sites gave evidence of classic Uruk material, including bevelled rim bowls, specimens of which were collected at SSP 1 (Fig. 12: 2), SSP 7, SSP 13, SSP 15 and SSP 29, with possible bevelled rim bowls found at SSP 11 and SSP 19. It is far too early to speculate on the nature of the Uruk presence; further work will explore the relationships between local communities and those from the southern Mesopotamian alluvial plains.

The third and second millennia B.C.

The transition from the Late Chalcolithic to the Early Bronze Age may be indicated in the Shahrizor by a type of bevelled rim bowl with thin, very straight everted walls and steep angle-cut lips (cf. Helwing 2011a: 213, 215). So far, however, the first half of the third millennium B.C. is underrepresented in the archaeological materials. The survey has not yielded finds of Scarlet Ware pottery, which could have been expected given that it is typical for the neighbouring regions along the piedmont zone and the nearby Diyala. Early Bronze Age painted pottery of the so-called Aliabad Ware is so far known only from one piece that has been found at Yasin Tepe (SSP 2), in a gap in the southeastern remains of the city wall, together with a terracotta wheel that can be dated to the late Early Bronze Age (Fig. 12: 3). Materials resembling pottery types known from late third millennium contexts in the Diyala region come mainly from sites in the southeastern Shahrizor such as Gird-i Shakar (SSP 24), but while few sites in the northern plain yielded these types there is one exception: Marif Tepe (SSP 3) where notable quantities of the ridge-shouldered jars typical of Akkadian pottery were found (Fig. 12: 3; cf. Delougaz 1952: pl. 195 D.556.540b).

Historical information about the region becomes available from the end of the third and the beginning of the second millennium B.C. (see above), enabling connections with the material culture. The finds from the excavations in Shemshara and other contemporary sites in the Rania Plain in the northeast of Sulaymaniyah province such as Basmusian (Læssøe 1959; Soof 1970b; Soof 1970a) and, in the Shahrizor, Bakr Awa (SSP 10; Husaini 1962; Madhloom 1965), show close links to early Old Babylonian material culture in the Hamrin (cf. Bergamini *et al.* 2002/3). During this period, the number of settlements decreases markedly in the wider region (Mühl 2012: 88–89), while such a decline is not detectable in the Shahrizor so far (cf. Fig. 5). Nevertheless, in the plain changes in material culture can be observed. Tell Shamlu, excavated by Kadhim al-Janabi in 1959 (Directorate General of Antiquities 1960; Janabi 1961), has ten occupation layers spanning from the late third millennium B.C. to the Iron Age. Layer VIII is dated to the early Old Babylonian period by a grave with some local variants of vessel types known from excavations at Ur (cf. Woolley and Mallowan 1976: pl. 104 type 37), Tell Asmar and Tell Harmal (cf. Ayoub 1982: 66 type 10 nos. 1–3, 90 nos. 1–3). According to Janabi, this layer is followed by a short hiatus, after which the architectural structures as well as the pottery assemblage change: the so-called Shamlu Ware appears in levels VII and VI (Janabi 1961: pls. 5, 6, 11, 12, 17). This is a hand-made type, red or brown slipped, and decorated with banded incisions and impressions. Decorated and plain vessels show S-curved sections (Fig. 14). In the subsequent layer V, a few pieces of this ware are still attested but mixed with far more numerous regional variations of Middle Bronze Age pottery such as shoulder beakers (Janabi 1961: pl. 4 no. 1, 2). The style of decoration and the stratigraphic position of Shamlu Ware allow a distinction between an older group characterised by decorations resembling floral and faunal elements and a younger group with reduced and schematized motifs (Fig. 15; Mühl 2011:297–300).

Janabi reported Shamlu Ware for nine sites in the Shahrizor (Janabi 1961; Fig. 14: 1–3), with additional finds coming from six sites surveyed during the SSP. The Shamlu Ware seems foreign or introduced to the region, but so far references from outside the Shahrizor are scarce. Single pieces have been found in Yorgan Tepe (Nuzi), Shemshara, and Dinkha Tepe (Starr 1937/39:pl. 92P, 115 E1, E2; Janabi 1961: map 1; Hamlin 1971: 103, 151, pl. 6, 1; Hamlin 1974: fig. 7, 1). Future excavations will hopefully contribute to a better understanding of this ware's origins and its chronological sequence. The archaeological data from the Shahrizor may well be connected to events known from historical sources, when Samsi-Addu of Ekallatum and Daduša of Eshnunna led a war in the adjoining regions (Mühl 2012: 88–89), including the territories of Qabra (Deller 1990) and Arraphe (Kerkuk; Ziegler 2011), and reports on the western Zagros (Eidem 1985: 95) mention refugees arriving from the Tigris region as well as people fleeing from the Turukkians and Gutians (see above). However,more data and research are needed to elucidate possible links between such information and changes in the material culture.

Late Bronze Age pottery material can be described as a mixture of local and Mesopotamian traditions (Fig. 16), but not all type fossils of this period can be fully correlated. While knobbed beakers (attested at seven SSP sites) and Kassite pottery types (attested at four SSP sites) show

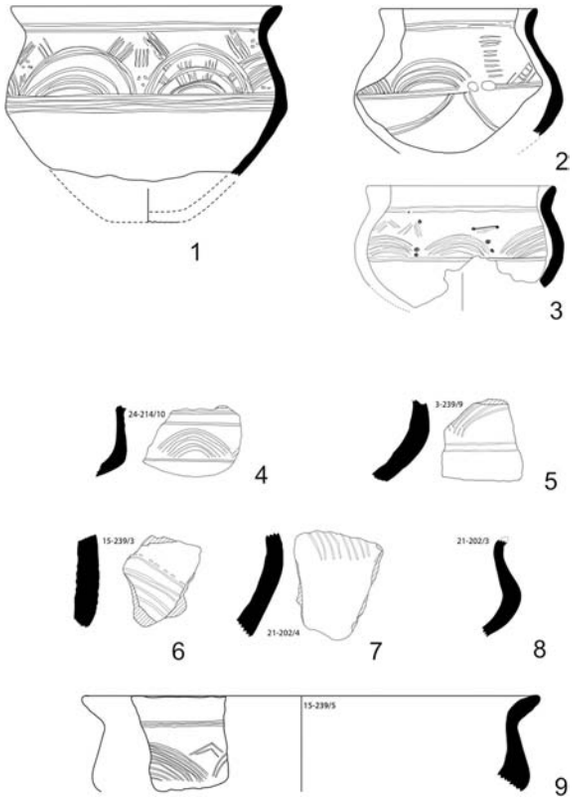


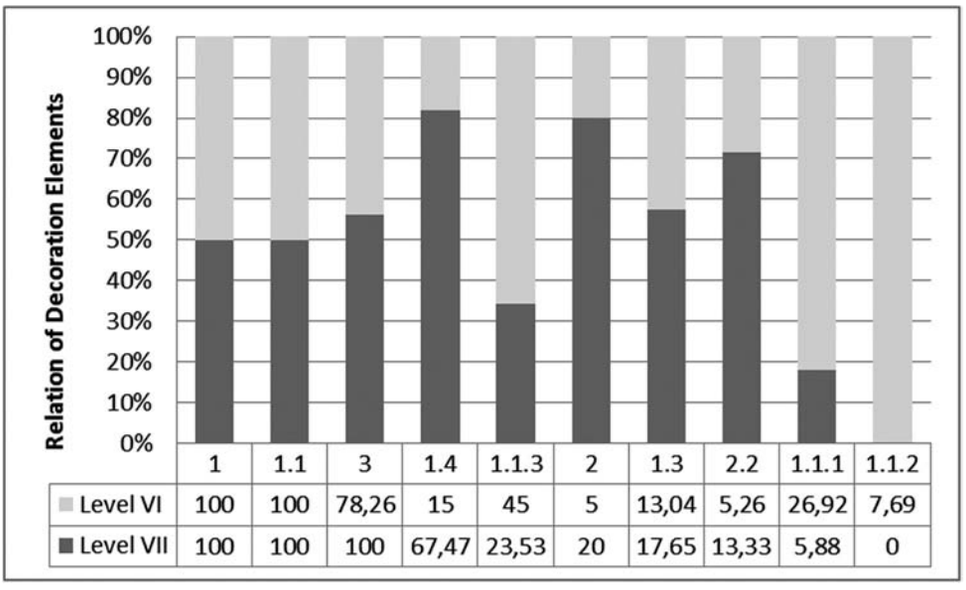
Fig. 14 Shamlu Ware from the Shahrizor. Nos. 1–3 excavated at Tell Shamlu (after Janabi 1961) and Nos. 4–9 recovered during the SSP.

influences from Northern and Southern Mesopotamia (Fig. 16: 1) as well as the Hamrin area (cf. Bergamini *et al.* 2002/03), fragments of vessels with theriomorphic band applications (attested at three SSP sites) reflect a local tradition of pottery production (Fig. 16: 2) that may be influenced by an Iranian material culture; this needs further research. This appearance of a mixing of cultural traditions continues into the Iron Age.

The first millennium B.C. *and later*

Typical Neo-Assyrian and Neo-Babylonian shapes, such as carinated bowls with everted rim (Fig. 16: 3) and fine ware beakers known as "Palace Ware" (Fig. 16: 4; cf. Hausleiter 2010: 258–60; Anastasio 2010: 32), are well represented at several sites in the SSP materials. Also, local types of carinated bowls with yellowish or reddish slip and polished surface treatment attest to intensive contacts with the Iron Age cultures in the West Iranian Zagros belt. Mesopotamian and Western Iranian traditions are combined in a survey find from Yasin Tepe (SSP 2), a vessel fragment with the rolled impression of a cylinder seal (Fig. 16: 5). This seal shows,beneath astral symbols, a horned animal, possibly a deer or a mountain goat, and an equid. A very similar cylinder seal at the Oriental Institute Museum of the University of Chicago (OIM-A.17647.00) executed in the so-called Cut Style also shows a row of animals with the same astral symbols and is dated to the Neo-Assyrian period. But while impressing pottery with cylinder seal impressions is not common in Iron Age Mesopotamia, it is known from finds in Luristan (Thrane 2001: fig. 84).

At Yasin Tepe, Achaemenid to Parthian period occupation can be observed in the western lower town. The best example is a fragment of a gadrooned bowl (Fig. 14: 6) resembling shapes of metal bowls with parallels from Persepolis, Pasargadae, and Zewiye (Schmidt 1957: pl. 89, 8; Young 1965: fig. 3, 6–9. 11. 12; 4, 6; Stronach 1978: fig. 116, 9–20). In general, the pottery of the Achaemenid period features relatively few characteristic key forms since many pottery types closely resemble those of the preceding Neo-Assyrian period in northern Iraq (cf. Curtis 2005). This makes it difficult



	1	1.1	3	1.4	1.1.3	2	1.3	2.2	1.1.1	1.1.2
Level VI	100	100	78,26	15	45	5	13,04	5,26	26,92	7,69
Level VII	100	100	100	67,47	23,53	20	17,65	13,33	5,88	0

Fig. 15 Rates for decoration types of incised Shamlu ware in Level VI and VII at Tell Shamlu: 1 decoration above broadest part of the body; 1.1 standing half-circles; 3 horizontal baseline on broadest part of the body; 1.4 vertical segment division; 1.1.3 dots between standing half-circles; 2 decoration below the broadest part of the body; 1.3 "flying" decoration elements; 2.2 hanging half-circles; 1.1.1 standing half-circles with row of dots; and 1.1.2 hanging half-circles with rays (after Mühl 2011: fig. 30).

to detect occupation and is likely to obscure relevant remains, which may in part explain the seeming decline of site numbers as indicated in Fig. 5. Hellenistic remains are scarce amongst the onsite material collected. So far, the only site yielding Hellenistic pottery is Yasin Tepe where recovered fragments include one of a stamped Rhodic amphora dating to the 2nd century B.C. (Elisabeth Katzy, University of Munich, pers. comm. August 2012).

Later period occupations can be found on twenty-three of the thirty SSP sites surveyed so far. Only Sutik Tepe (SSP 23), a site of the Sassanid period on the hilly south-western edge of the Shahrizor, is founded on virgin soil, while other sites are either on top of tell sites and their adjacent lower towns or extend the conurbation zones of regional centres such as the Sassanid sites SSP 4 and 5 near Yasin Tepe (SSP 2) and the Islamic site SSP 28 close to Bakr Awa (SSP 10). Ottoman period material (Fig. 16: 7–9) constitutes the latest occupation on tell sites in the Shahrizor, represented by the so-called Kurdish Ware (Fig. 16: 7–8): red shiny polished pottery in the form of flat rimmed dishes and bowls with decorations that were frequently incised after firing, with a high amount of mineral temper (including particles of a golden colour). Ottoman period pipes were found on many sites, such as Qara Tepe (SSP 18), and usually associated with significant quantities of Kurdish Ware (Fig. 16: 9; for comparisons see Jarjis 1987). An exception is the single find of a pipe head in the cave site Khan Ahmed Khan (Fig. 1: C1), which did not show an association with any traces of seasonal or permanent occupation. During the Ottoman period it might have served as a shelter for control posts monitoring a fortified pass to Iran through the Hawrman (see above) since a large defensive wall is visible from the cave over a length of at least a kilometre. Prehistoric finds from Khan Ahmed Khan such as flint tools (recovered from the surface and from the debris dug up during the construction of a water reservoir; observed in September 2011) were scarce and also indicate no permanent use of the cave.

Limits to archaeological survey and future investigations

The settlement trends presented above are only preliminary and new finds could significantly increase or change our knowledge of the local archaeological material. We plan to investigate more tell sites and sample low mounded and flat areas to better capture and understand settlement development in the plain.

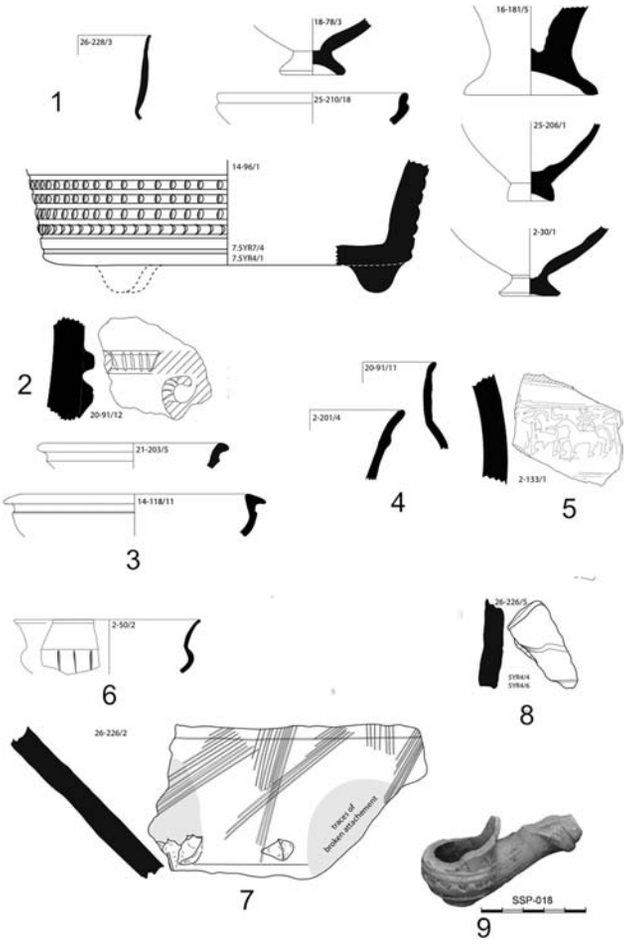


Fig. 16 Pottery from the second (1, 2) and first millennium B.C. (3–6) to the Islamic and Ottoman periods (7–9) collected in the SSP.

Questions that are linked to the archaeological materials from the SSP concern the interplay between human interactions with the landscape. The dichotomy of pastoralism and urban landscape is often stressed in research literature, but lacks temporal resolution and clear empirical representation in the Shahrizor. So far, nothing is known about the relationship between tells and single occupation settlements, which are hardly detectable from the ground. Targeted walks to features identified on CORONA and other imagery and randomly sampled areas offer the possibility of detecting additional settlements in the Shahrizor, but so far this type of work has been carried out to only a limited extent. Off-site sample walks were undertaken, mostly in the vicinity of Yasin Tepe (SSP 2) and Bakr Awa (SSP 10), in order to obtain information on land use systems (e.g. agricultural field systems and the relationship between pastoral and crop-cultivated zones). Field scatters are interpreted as traces of past, fertilized fields associated with settlements (Wilkinson 1982; Wilkinson 1989; Wilkinson 2003: 117–18). At this stage, field scatters analysed in the Shahrizor do not match the results from Northern Mesopotamian surveys. In fact, almost no field scatters have been observed in our research area. This might be partly due to different manuring systems and/or land use strategies or due to the fact that soils in the Shahrizor have tended to be more fertile and did not require as much periodic fertilisation as soils in the Jazirah or elsewhere. The deep sounding results suggest that alluviation may have buried not only sites but also deposits from field scatters in the area. Earlier, we discussed how a sherd from a fairly late period (Achaemenid–Hellenistic) was found about 1.5 m below the surface and below the plough zone. Considering the likelihood that sites are buried in the plain, we probably have an incomplete representation of archaeological sites in specific parts of the Shahrizor; further geoarchaeological analyses and survey should help to clarify this.

Summary

The Shahrizor is an area well-suited for a combined palaeoenvironmental, historical and archaeological project. The initial results of our work show that after the Pleistocene, when sedentary societies began to develop in the region, favourable climate and vegetation made the Shahrizor attractive for settlement. Many tell sites, including the large site of Bakr Awa (SSP 10), developed on the Pleistocene terraces. For the first periods of settlement, we find evidence at the very early Neolithic site of Bestansur (SSP 6) that is comparable to sites such as Jarmo, but otherwise other early Neolithic remains are so far sparsely attested in the valley. While the survey has yielded material culture attributed to the Hassuna culture, the Halaf has largely been missing in the survey finds so far, though attested on excavated sites. For all the prehistoric periods, we expect that some of these settlements are obscured or buried by alluvial infilling in the plain or deeply stratified within multi-period tells. On the other hand, different economic strategies (e.g., agro-pastoralism) are likely to have played a role in affecting the archaeological visibility of these periods. Late Neolithic communities may have lived in small, inconspicuous settlements characterized by frequent shifting.

By the fourth millennium B.C., we begin to see evidence for multiregional influences and connections in the Shahrizor, with material culture finds alternating between southern and northern Mesopotamian and Iranian styles. Historical sources allow us to identify the important and long-lived kingdom of Simurrum as the local power in the second half of the third millennium and in the first part of the second millennium, with a change in material culture emerging when historical information on the kingdom fades. There are major gaps and missing settlement data for the first half of the third millennium and again for the mid-second millennium B.C. In the later second millennium, the Shahrizor was part of the Kassite state, as suggested by historical and archaeological sources. Settlements of the first millennium B.C. and later are more abundant, indicating that the Shahrizor was an important settlement zone from that time onwards. During this time, we begin to see advanced soil formation and a decrease in regular alluviation.

With the environmental and archaeological records informing us on climatic, landscape, and settlement trends in the region, historical data provide us with the political history of the region from the later third millennium B.C. onwards. In different historical periods, the Shahrizor has alternated between being divided into relatively small independent states, forming the core region of a territorial state or being integrated within larger regional empires. In many periods, the region formed part of the border zone between states and, therefore, was subject to political conflict and competition between larger entities. Due to its favourable geographical position, it emerges in many periods as an important traffic and cultural corridor, linking Northern and Southern Mesopotamia with Western Iran.

Our intent has been to reinitiate work in Iraqi Kurdistan in the spirit of Robert Braidwood, by integrating experts from a variety of fields for a multidisciplinary effort that attempts to link palaeoenvironmental results with historical and archaeological data. Future research goals include developing a more detailed understanding of the socio-political history of the region, obtaining a better picture of prehistoric periods by undertaking excavations at the site of Gurga Chiya (SSP 11; Fig. 1), and differentiating between environmental change caused by anthropogenic processes and climatic change. We expect that the results from the different research components will complement each other to provide a more thorough understanding of the Shahrizor, as they have already begun to do.

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